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Survey of the
St. Louis Public Schools

EDUCATIONAL SURVEY SERIES

Survey of the St. Louis Public Schools

By CHARLES H. JUDD

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IN THREE PARTS
PART TWO—THE WORK OF THE
SCHOOLS



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PART II

The Work of the Schools

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PART II—THE WORK OF THE SCHOOLS

CHAPTER IX

NON-PROMOTIONS AND TWO-QUARTER PROMOTIONS IN THE ELEMENTARY SCHOOLS

BY CHAS. H. JUDD

Summary.

This chapter discusses the extent to which pupils in the elementary school fail of promotion and the extent to which other children are carried along faster than the normal by being promoted two quarters at a time.

The records of non-promotion and two-quarter promotion are tabulated in full for all of the schools. They show that non-promotion is very high in the early quarters of the first grade. It is relatively high again in the fourth and sixth grades.

In some of the grades two-quarter promotions balance as they should non-promotions. In general non-promotions are not as high as in some cities, showing that the work of the schools is, on the whole, successful.

Great irregularities and variations in practice appear in individual schools. Full details are supplied.

RECOMMENDATIONS

It is recommended that reports on non-promotion and two-quarter promotions be made a regular feature of the administration of the schools. To this end the reports on these matters should be filed and tabulated each quarter in the central office.

It is recommended that a committee of principals be created to formulate principles which shall render more uniform the practices of the school system in regard to promotions.

NON-PROMOTIONS AND TWO-QUARTER PROMOTIONS IN THE ELEMENTARY SCHOOLS

The success of a school system is indicated in very large measure by its ability to carry the children in the grades forward at a normal rate. Any child who fails to complete the work of a grade in the time allotted in the course of study becomes a burden to the school system. For example, if a child has done the work of the third grade in arithmetic, but is judged by his teacher to be so unsuccessful in this work that he is required to repeat it, evidently the school system is carrying in the third grade a double burden. Furthermore, it has been shown by careful studies of a few such cases that it is sometimes altogether disadvantageous for the child himself to be required to repeat the work. He comes back to the arithmetic the second year discouraged because of his failure the year before, confused because he does not understand the problems and has not mastered the methods of their solution during his first year of work, and as a result of these unfavorable conditions he gradually becomes more and more discouraged and does less and less satisfactory work, with the result that at the end of the second year he is intellectually more retarded in this subject than he was during the first year.

These comments are enough to make it clear that whenever a child fails in any grade the school system ought to face the fact that it is dealing with a difficult problem and must adopt methods that differ from the methods that brought on the issue. In other words, it is not legitimate for a school system to throw the responsibility for a failure in such a case on the child himself. There was a time when the course of study was regarded as fixed and infallibly right. If a child did not succeed under the existing course of study, he was supposed to be entirely wrong. The development of a broader attitude in regard to the course of study has, however, made it clear that the school, especially when it requires the attendance of

all the children in the city, must study the different cases and must adapt the course and its methods of administering this course to the needs of different kinds of children. That St. Louis accepts this view is clearly indicated in many phases of the public school organization.

In the first place, the school system of St. Louis has recognized the importance of taking out of the grades any children who are so far behind in their regular work that they give evidence of being mentally deficient. As shown in Professor Dearborn's report, it is an expensive type of school which deals with these defective children, but the advantage to the city at large of taking backward children out of the regular grades is not to be questioned.

In the second place, St. Louis has organized in many of the schools classes which are called ungraded classes. In these classes children who are temporarily deficient are given special attention. The methods of presenting subjects are adapted in these classes to the needs of individual children. It is thus possible to modify the method of procedure without radically upsetting the school program or modifying those more generally successful methods which are satisfactory in the cases of most of the pupils.

Finally, St. Louis has, in the third place, a device which is not common in the country, but will be shown in the statistical tables which are to follow in this section of the report to be a very successful method of dealing with this important problem of the advancement of children through the grades. The elementary school is organized in such a way that the course of study is marked off into periods of ten weeks of work for each unit. Each grade thus consists of four periods of ten weeks each. Advancement from one section to the next of the grade comes frequently enough so that it is possible to give a child ten weeks of repetition of the work in which he has been unsuccessful without holding him back for a full year. Furthermore, it is entirely possible where a child shows himself to be unusually competent to carry him forward at a double

pace by skipping him over one of these periods of ten weeks. It is legitimate to think of this plan of work as an effort to provide more rapid promotion than usual for the bright children and a somewhat slower pace for the children who are less competent. The ordinary children, or those who may be regarded as the normal children of the school system, ought to move forward, if everything is well adjusted, at the regular expected rate. It is fair to assume also in this field of human behavior, as in all fields of human behavior that have been canvassed by the statistical method, that there will be just about an equal balance between those who fall below the normal and those who are above the normal. We ought therefore to find, if the St. Louis scheme is working well, about as many children on the one side of the normal as on the other side.

With these introductory remarks we may turn directly to the facts. They are presented in full in Table I. In this table the percentage of promotion, non-promotion, and two-quarter promotion for the various grades in the school system are all given in detail. We may select for comment the non-promotions, since these are the figures which call attention most pointedly to the difficulties that are encountered in the school system. If we look at the bottom of the columns under non-promotion, beginning with those that relate to the various quarters of the first grade, we find that 27 per cent of the children fail of promotion at the end of the first quarter of the first grade. This means that twenty-seven children out of every hundred who come into the school system find it very difficult to get started in the first grade. Some of these children who are held back will later prove to be mentally defective and they will be drafted off and put in special schools. Some of them come from homes where they have had no preparation for school work and they begin their school life somewhat slowly and ineffectively. They can be held back for another quarter and the work of the first quarter can be repeated. If we follow along the horizontal line that represents the non-promotions in different quarters for the first section

TABLE I.

Grade	Promotions								Non-Promotions							
	One Quarter				Two Quarters											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
8-4	100	87	100	91	0	9	0	7	0	3	0	3	0	3	0	3
8-3	91	39	93	71	7	37	6	27	2	25	1	1	2	25	1	1
8-2	79	88	89	84	7	6	9	6	14	6	2	11	14	6	2	11
8-1	91	88	97	82	5	3	3	10	3	9	1	9	3	9	1	9
8	90	86	94	86	6	8	5	7	4	6	1	6	4	6	1	6
7-4	80	88	85	86	7	3	6	4	13	9	9	9	13	9	9	9
7-3	94	86	94	85	2	5	3	2	5	9	4	12	5	9	4	12
7-2	92	88	87	85	4	4	8	3	4	7	5	11	4	7	5	11
7-1	90	83	90	79	5	6	6	8	5	11	4	12	5	11	4	12
7	91	87	90	84	4	4	5	4	5	9	5	11	4	9	5	11
6-4	86	85	84	84	7	7	9	7	6	8	7	9	6	8	7	9
6-3	91	87	87	83	5	7	7	6	4	7	6	11	4	7	6	11
6-2	85	89	94	87	7	6	4	5	7	6	2	8	7	6	2	8
6-1	86	89	94	89	8	6	4	3	6	4	2	8	6	4	2	8
6	87	87	89	86	7	7	6	5	6	6	4	9	6	6	4	9
5-4	88	86	90	87	9	6	4	4	3	8	5	10	9	6	4	9
5-3	92	87	88	90	4	5	6	1	4	8	5	8	4	8	5	8
5-2	92	85	87	85	3	6	7	6	5	9	6	9	3	6	7	6
5-1	92	88	90	88	3	6	6	3	5	6	4	9	3	6	6	3
5	91	86	89	87	4	6	6	4	4	8	5	9	4	6	6	4
4-4	86	85	92	87	4	6	3	2	10	10	6	11	4	6	3	2
4-3	90	89	87	87	4	4	5	2	6	8	7	12	4	4	5	2
4-2	91	87	86	88	5	3	5	2	4	9	9	9	5	3	5	2
4-1	84	86	92	85	6	4	4	5	10	9	5	10	6	4	4	5
4	87	87	89	87	5	4	4	3	8	9	7	10	5	4	4	3
3-4	87	90	88	87	6	4	6	5	7	5	6	8	6	4	6	5
3-3	92	88	94	85	5	5	4	7	4	7	2	8	5	5	4	7
3-2	92	90	88	91	5	4	4	4	2	6	8	4	4	4	4	4
3-1	90	90	89	89	3	3	8	4	7	7	3	7	3	3	8	4
3	90	90	91	88	5	4	5	5	5	6	4	7	3	4	5	5
2-4	87	85	90	92	5	7	8	3	8	7	3	5	5	7	8	3
2-3	92	86	94	88	4	6	4	5	4	8	2	7	4	6	4	5
2-2	91	89	86	87	3	3	6	3	6	8	8	10	3	3	6	3
2-1	86	83	94	86	2	4	4	7	12	14	2	7	2	4	4	7
2	89	86	92	89	3	5	5	4	8	9	3	7	2	5	5	4
1-4	89	86	83	89	3	5	14	4	7	9	4	8	3	5	14	4
1-3	89	83	93	81	2	7	4	7	9	10	4	12	4	7	4	7
1-2	88	84	84	82	2	3	5	2	10	13	12	16	2	3	5	2
1-1	71	66	70	68	2	1	0	1	27	34	30	31	1	1	0	1
1	79	81	82	83	2	3	4	3	19	15	13	13	1	3	4	3
Ungraded ..	66	59	78	68	2	10	4	5	33	30	18	27	2	10	4	5
Total	87	86	89	86	4	5	5	4	9	9	6	9	4	5	5	4

FIRST QUARTER

Grade	Enrollment	Promotions		
		One Quarter	Two Quarters	Non- Promotions
8—4	3	3	...	...
8—3	1,976	1,807	133	36
8—2	388	306	26	56
8—1*	1,948	1,781	102	67
7—4*	578	460	40	77
7—3*	1,819	1,701	30	93
7—2	1,120	1,031	48	41
7—1	1,988	1,793	105	90
6—4*	1,306	1,118	91	80
6—3*	1,622	1,482	79	62
6—2	1,671	1,428	122	121
6—1	2,166	1,860	171	135
5—4*	1,648	1,445	153	55
5—3	1,880	1,726	74	80
5—2*	2,137	1,973	66	100
5—1	2,430	2,247	71	112
4—4*	2,096	1,794	89	216
4—3*	2,340	2,109	83	150
4—2	2,203	2,000	107	96
4—1*	2,924	2,451	190	285
3—4	2,039	1,780	120	139
3—3*	2,419	2,226	110	89
3—2*	2,409	2,216	129	60
3—1*	3,177	2,844	110	225
2—4	2,243	1,962	112	169
2—3*	2,443	2,252	91	101
2—2*	2,448	2,232	69	144
2—1*	4,802	4,135	85	580
1—4*	2,089	1,866	71	146
1—3*	2,634	2,341	51	245
1—2*	1,631	1,442	27	166
1—1*	7,293	5,166	119	2,004
Ungraded	529	347	8	174

*Promotions and non-promotions do not equal enrollment.

SECOND QUARTER

Grade	Enrollment	Promotions		Non-Promotions
		One Quarter	Two Quarters	
8—4	2,153	1,882	197	74
8—3	155	60	57	38
8—2	2,105	1,856	126	123
8—1	460	405	15	40
7—4	1,883	1,660	49	174
7—3	1,009	869	49	91
7—2	2,034	1,794	88	152
7—1	1,209	998	72	139
6—4	1,726	1,461	129	136
6—3	1,576	1,364	106	106
6—2	2,088	1,849	123	116
6—1*	1,656	1,478	104	73
5—4	1,883	1,616	115	152
5—3	2,022	1,751	110	161
5—2*	2,436	2,068	153	217
5—1	2,000	1,764	123	113
4—4	2,428	2,055	141	232
4—3	2,161	1,913	77	171
4—2	2,635	2,300	88	247
4—1	2,342	2,021	99	222
3—4*	2,521	2,277	113	130
3—3*	2,440	2,136	124	179
3—2*	3,075	2,773	108	197
3—1*	2,194	1,979	71	143
2—4	2,628	2,236	196	196
2—3	2,376	2,049	134	193
2—2*	4,117	3,659	132	325
2—1*	2,653	2,192	100	362
1—4	2,620	2,250	125	245
1—3	2,070	1,711	145	214
1—2	5,199	4,392	131	676
1—1	2,139	1,403	12	724
Ungraded	441	261	46	134

*Promotions and non-promotions do not equal enrollment.

THIRD QUARTER

Grade	Enrollment	Promotions		
		One Quarter	Two Quarters	Non- Promotions
8-4	102	102	...	...
8-3	2,150	1,994	137	19
8-2	576	512	54	10
8-1	1,646	1,589	43	14
7-4	1,031	872	62	97
7-3	1,848	1,729	48	71
7-2	1,262	1,103	98	61
7-1	1,873	1,680	119	74
6-4	1,504	1,269	136	99
6-3	2,111	1,830	153	128
6-2	1,412	1,322	62	28
6-1	1,764	1,653	71	40
5-4	1,926	1,736	85	105
5-3	2,343	2,073	142	128
5-2*	2,113	1,828	156	128
5-1*	2,177	1,958	121	92
4-4	2,212	2,025	61	126
4-3	2,744	2,398	148	198
4-2	2,232	1,910	115	207
4-1*	2,463	2,260	87	117
3-4	2,287	2,015	132	140
3-3*	3,185	3,002	119	63
3-2*	2,218	1,955	88	177
3-1	2,671	2,383	204	84
2-4	2,370	2,125	184	61
2-3	4,039	3,790	177	72
2-2	2,530	2,164	160	206
2-1	2,567	2,421	102	44
1-4*	1,952	1,613	264	74
1-3	4,553	4,231	161	161
1-2	2,100	1,758	99	243
1-1*	4,017	2,798	11	1,207
Ungraded	598	467	21	110

*Promotions and non-promotions do not equal enrollment.

FOURTH QUARTER

Grade	Enrollment	Promotions		Non-Promotions
		One Quarter	Two Quarters	
8—4	2,486	2,253	170	63
8—3	154	110	42	2
8—2	1,875	1,567	105	203
8—1	619	507	59	53
7—4*	1,977	1,704	84	187
7—3*	1,085	920	27	132
7—2*	1,912	1,627	65	219
7—1*	1,308	1,038	105	159
6—4*	2,117	1,787	143	186
6—3	1,422	1,183	84	155
6—2	1,848	1,599	97	152
6—1	1,636	1,457	43	136
5—4	2,259	1,957	80	222
5—3*	1,977	1,789	26	161
5—2	2,251	1,920	138	193
5—1	2,112	1,850	66	196
4—4	2,578	2,247	46	285
4—3*	2,241	1,939	39	264
4—2*	2,581	2,284	62	232
4—1	2,324	1,969	126	229
3—4*	3,065	2,674	148	241
3—3*	2,167	1,846	143	180
3—2	2,687	2,456	113	118
3—1*	2,280	2,033	84	164
2—4	3,957	3,649	103	205
2—3	2,360	2,076	112	172
2—2	2,630	2,290	68	272
2—1	2,125	1,834	141	150
1—4	4,071	3,618	143	310
1—3	2,183	1,779	144	260
1—2	3,045	2,488	70	487
1—1*	1,166	790	6	369
Ungraded	556	377	29	150

*Promotions and non-promotions do not equal enrollment.

of the first grade, we see that the non-promotions in the second quarter are 34 per cent, in the third quarter 30 per cent, and in the fourth quarter 31 per cent. The reason why the percentage of failure is larger in the second quarter than it was in the first can be explained as follows. Relatively few

children enter school so as to be in the first section of the first grade for the first time in the second quarter of the year. The majority of the children who are in this section of the first grade in the second quarter are children who remain behind. They are therefore the duller children of the group which has for the most part gone forward. The percentage of failure is accordingly somewhat larger in this group than it was in the initial group.

Such explanations as these can be worked out in detail for most of the groups that are represented in the first grade. We pass on, however, to comment on the fact that after children have been promoted out of the first section of the first grade the percentage of failure rapidly becomes very much smaller. Thus we see that in the second section of the first grade the percentage drops in the successive quarters to 10, 13, 12 and 16 per cent, and in the still later quarters of the first year the percentage of failure is very much reduced. All of the figures with regard to the first grade taken together show that there is a good deal of readjusting which is going on during the first grade. The large percentage of non-promotions also makes it clear that the adjustment of the children and the school to one another is, as has been stated above, one of the most important questions that the school system has to face. If by any chance it were true that the subsequent grades exhibited anything like the same degree of non-promotion, we should have a type of congestion in the lower grades and a type of discouragement of the pupils that would bear eloquent testimony to the ineffective organization of the schools. Just in the degree in which the situation clears up as we pass out of the lower sections of the first grade does the evidence accumulate that the adjustment between the school and the children is improving, and when we find that the percentage of non-promotion has been reduced to the low figure which is exhibited in the fourth section of the first grade we may say that the school system has during this first grade very thoroughly mastered its problem.

Indeed, we become more confident of this conclusion if we look at that section of Table I which deals with two-quarter promotions. As pointed out in the introductory paragraphs, the St. Louis plan makes it possible to advance children somewhat more rapidly than the normal by skipping them over one quarter of the work. Such recognition of merit is possible at any time during the school year, but is especially practiced at the end of the quarters. We see that there are a few children in the first section of the first grade who can be advanced more rapidly than normal. The percentages however, are very small for the first two sections of the first grade. By the time we come to the third section of the first grade the percentage of children who go forward more rapidly increases appreciably. While this percentage is not so large as the percentage of those who do not succeed, it is still worth while noting that in the four quarters of the year children were advanced out of the fourth section of the first grade to the extent of 3, 5, 14, and 4 per cent, respectively.

Without attempting to comment in the same detail on the figures for each of the different grades, we may point out that there are still evidences of readjustment going on in the second grade. We note in the first section of the second grade that there is a large percentage of non-promotion, but in the main this grade shows in its non-promotions and in its two-quarter promotions a fair balance, indicating that the course of study has now been worked out in such a way as to adjust itself to the children and the pupils are being treated by methods that are successful in a very high degree.

The third grade calls for no special comment. It is to be noted that the non-promotions in this grade are somewhat less than the non-promotions in the first two grades.

The fourth grade, on the other hand, attracts our attention because it becomes evident from the figures presented for this grade that non-promotion is somewhat more common in the fourth grade than in the second and third grades. A similar fact is found in the records of many school systems. The

fourth grade seems to be a grade which offers special difficulties to the children of many school systems. The fourth grade is the first grade in which the children are confronted by some of the maturer forms of thought. The first three grades, constituting the primary grades of the school, deal with the elements of reading and number work and handwriting. The children of the fourth grade are supposed to have mastered these elements and are set at tasks which require the use of the abilities which they have been accumulating in the primary years. Evidently this large demand made in the fourth grade is a very difficult one for the children to meet. The result is that many of them fail of promotion and are obliged to repeat the work of the grade.

It would be well for the principals and supervisors of the St. Louis system to examine the fourth grade course carefully with a view to modifying somewhat the requirement which is imposed on the children. As pointed out above, wherever a course of study becomes so severe that children cannot carry it successfully, the responsibility ought to be shared by the school system and ought not to be thrown entirely on the shoulders of the pupils. If this is an especially trying time in the life of the pupils in the school, it ought to be a time when the school system is especially vigilant in attending to the pupils' needs.

The fifth grade shows a very substantial reduction of non-promotion. This grade also shows a very fair balance between two-quarter promotions and non-promotions. The situation in the sixth grade is still better in both respects.

The seventh grade is another grade where there is a high percentage of non-promotions and a relatively unsatisfactory balance in the two-quarter promotions. The explanation of this higher number of failures in the seventh grade is probably to be sought again in the severity of the course. In a large sense of the word, the seventh grade marks the completion of much of the advanced work of the elementary school. The eighth grade is in many cases devoted to reviews and to a

direct preparation of those who are to go on into the high school work. There is a tendency in some quarters to question the desirability of continuing the eighth grade in its present form. There can be no doubt at all that in American schools in general there has been a tendency to postpone the beginning of specialized subjects such as those which are recognized as appropriate in the high school. The result has been that the continuation of the elementary subjects during these years has made the last years of the elementary course relatively less productive than they might be. There is also some lack of enthusiasm on the part of many children for the work of the upper years. This is attested by the withdrawals from the schools at the end of the sixth year.

At all events, the arrangement of the seventh-year course is a crucial problem of school organization and the relation between the elementary school and the high school here begins to present itself as an important and difficult problem. The St. Louis school system would do well to raise pointedly the question why there should be more failures in the seventh grade than there are relatively in the sixth grade. This must mean that the course of study is somewhat less well adjusted to the needs of the students than is the course in the sixth grade. It would be well for St. Louis to consider the example in this matter of such schools as the schools of Kansas City, of Boise, Idaho, and of other centers where a seven-year course is the complete elementary course, students passing at the end of the seventh grade into the differentiated work of the high school.

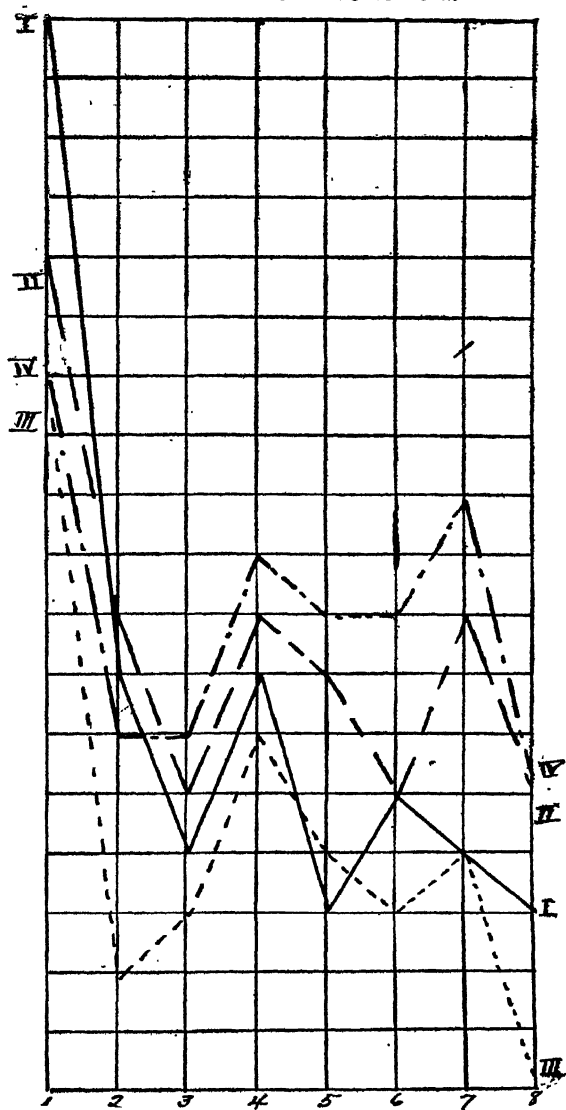
Indeed, there is a movement in the country at large which begins this differentiation at the end of the sixth grade. This is sometimes called the intermediate school movement or the junior high school movement. This movement is modifying the course of study administered in both the seventh and eighth grades and is succeeding wherever it is put into vigorous operation in attracting children for a longer period in the schools and in offering to these children of the later years of

the elementary school those courses which will more directly prepare them for life in business or in the more advanced stages of study which they are to take up.

One further point of comment appears as one examines the table of non-promotions. It will be noted that at a number of points in the table for the eighth grade there is a very heavy non-promotion. If one examines the two-quarter promotions, it will also be noted that there are certain very large percentages which show that this grade is entirely different in its treatment of the problem of promotion and non-promotion from any other grade. The explanation in these cases is to be found in the fact that the transition from the elementary school to the high school involves a change from the quarter basis to the semester basis. In order to effect this change elementary principals hold back a certain number of pupils and advance another group more rapidly than in the earlier grades. The arrangement of the elementary schools is therefore here subordinated to the necessity of relating the elementary grades to the high school and the system breaks down in a measure in working out this combination.

Certain minor facts with regard to non-promotion and two-quarter promotion come out if we put together the figures of the table in a graphic form. Diagram 1 shows the succession of non-promotions in different grades, separating the first quarter from the second and the second from the third, and so on. The full drawn line in Diagram 1 represents the non-promotions in different grades as these non-promotions appeared in the first quarter. The high point in the first grade, fourth grade, and sixth grade is the characteristic fact in this curve. The second quarter shows throughout a higher level than did the first quarter. This means that the children who are classified at the beginning of the year in the second section of a grade are, on the whole, more likely to suffer non-promotions than are the children in the first quarter. The dotted line shows the third quarter and here we find that children who are brought together in the third section of any

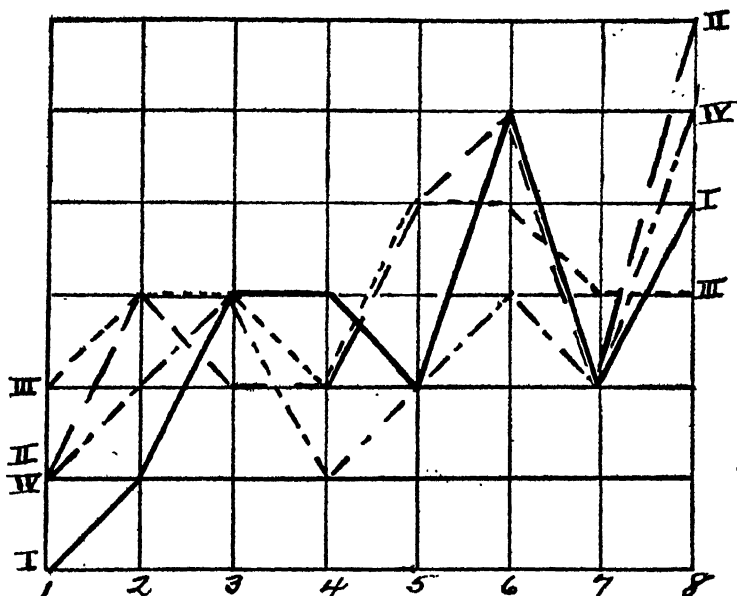
DIAGRAM I—NON-PROMOTIONS



grade are less likely to suffer non-promotion than in the first and second sections. The children in the fourth section of each of the grades are relatively very likely to suffer non-promotions. This indicates that the classification of children in all of the grades is settling down in such fashion that there is a difference between the kinds of children to be found in the various quarters. There is here a subject that ought to be looked into very carefully by the officers of the school system. It is quite impossible without a more intimate acquaintance than the writer has with the St. Louis system to explain the meaning of this distinction, but the distinction is so impressive that the assembling of the figures in this form points out a problem which should be attacked.

Diagram 2 brings together the facts with regard to two-quarter promotions. The distinctions between different groups of children is not by any means as clear here as it was in the diagram for non-promotions; and yet it appears on a careful examination of this diagram that the children who are grouped together in the third section of each of the grades are promoted by two-quarters much more frequently than the children who are assembled in the fourth sections. The first and second sections of the various grades cross each other with such frequency that no generalization is possible.

Two facts come out clearly, then, in the comparison of the non-promotions and double promotions. The two-quarter promotions are not so distinctly grouped and ordered as are the non-promotions. The matter of non-promotions appears, therefore, to be a somewhat more definite and crucial matter. The practices of the school system as a whole with regard to two-quarter promotions are less conspicuously differentiated. It does appear that in the sixth grade there is usually a somewhat higher two-quarter promotion than in any other grade except the eighth, and the two-quarter promotions evidently do not get well under way until we reach the third grade. In some cases the second grade shows a relatively high level of two-quarter promotions.

DIAGRAM II
DOUBLE PROMOTIONS

When we take together the facts with regard to two-quarter promotions and non-promotions we may say with regard to the St. Louis system that the situation is a very good one. In the first place, the percentage of non-promotions is relatively low as contrasted with some other cities. It is distinctly lower than Cleveland, Ohio. It is about at the same level as Grand Rapids, Michigan. As over against Grand Rapids, Michigan, St. Louis has the advantage of its two-quarter promotions, which, as indicated throughout this discussion, balance in a very large measure the number of non-promotions. St. Louis is dealing with the progress of its children in a fashion which indicates the high degree of success of this special four-quarter arrangement which is practiced in this school

system, but is not duplicated in most of the other school systems of the United States. The system is capable, as indicated in the foregoing discussion, of certain improvements, but in the main it is to be commended as accomplishing in a large way the major purpose of advancing the children regularly through the work of the successive grades.

Up to this point we have been discussing the system as a whole. We turn now to the individual schools. What has been said with regard to the system as a whole can not always be repeated with regard to single school buildings. Indeed, it is possible within the St. Louis system to compare the different school buildings with each other in such a way as to bring out clearly the efficiency of the principals in managing the system of promotion which has been adopted by the system as a whole. It does not follow that every school building ought to have exactly the same ratio of students who are non-promoted and double-promoted. It is entirely conceivable that in some quarters of the city the course of study does not adapt itself as well to the needs of the pupils as in other sections of the city. It can legitimately be argued that there ought to be a modification of the course in some quarters so as to meet better the demands of pupils. We may, therefore, refer to the individual schools both by way of contrasting the practices in these schools with the practice in the system as a whole and by way of raising many school problems that relate to the individual school building. For purposes of such comparison non-promotion tables have been prepared for the various quarters of the year and in these tables the schools are arranged in the order of the amount of non-promotion exhibited by their records. Thus, if we take the record of the first quarter, we find that the Clay School failed 25 per cent of the children. This seems to be a very high figure. Adams, Shaw, Glasgow and Jefferson follow with figures that are 20 per cent or more. By way of contrast attention is called to the bottom of the list. Here we find such schools as Blair, Canterbury, Cupples and others where there is no non-promotion at the end of the first quarter.

TABLE II.

NON-PROMOTIONS—FIRST QUARTER

Clay .....25	Cottage Avenue.... 9	Lyon 4
Adams .....21	Crow 9	Mann 4
Shaw .....21	Divoll 9	Wyman 4
Glasgow . ....20	Farragut 9	Blow 3
Jefferson .....20	Long 9	Bryan Hill..... 3
Carondelet .....19	Madison 9	Chouteau 3
Howard .....19	Woodward 9	Dozier 3
Ashland .....18	Arlington 8	Dumas 3
Baden .....18	Benton 8	Hamilton 3
L'Ouverture .....18	Cote Brilliante.... 8	Lafayette 3
Marquette .....18	Kingshighway 8	Lindenwood 3
Shepard .....18	Lowell 8	Marshall 3
Ames .....17	Pestalozzi 8	Neosho 3
Carr Lane.....17	Stix 8	Oak Hill..... 3
Franklin .....17	Clinton 7	Washington 3
Longfellow .....15	Eliot 7	Devonshire 2
Harney Heights...14	Sigel 7	Harrison 2
Riddick .....14	Banneker 6	Hodgen 2
Columbia .....13	Clark 6	Mullanphy 2
Webster .....13	Grant 6	Clifton Heights... 1
Froebel .....12	Roe 6	Delany 1
Gratiot . ....12	Walnut Park..... 6	Shenandoah 1
Hempstead .....12	Des Peres..... 5	Blair 0
O'Fallon .....12	Gardenville 5	Canterbury 0
Irving .....11	Laclede 5	Cupples 0
Monroe .....11	Meramec 5	Dessalines 0
Penrose .....11	Bates 4	Douglas 0
Carr .....10	Emerson 4	Garnett 0
Charless .....10	Fanning 4	Jackson 0
Fremont .....10	Field 4	Mt. Pleasant..... 0
Henry .....10	Garfield 4	Rock Spring..... 0
Pope .....10	Humboldt 4	Sherman 0
Simmons .....10	Lincoln 4	Wheatley 0

NON-PROMOTIONS—SECOND QUARTER

Garnett .....25	Sherman .....11	Hempstead 6
Baden .....19	Banneker .....10	Laclede 6
Shepard .....19	Benton .....10	Riddick 6
Dumas .....18	Carondelet .....10	Washington 6
Madison .....18	Cupples .....10	Bates 5
Walnut Park.....18	Des Peres.....10	Cottage Avenue... 5
Arlington .....16	Dozier .....10	Gardenville 5
Shaw .....16	Gratiot .....10	Jackson 5
Stix .....16	Monroe .....10	Mann 5
Charless .....15	O'Fallon .....10	Mullanphy 5
Elliot .....15	Roe .....10	Pope 5
Jefferson .....15	Chouteau 9	Sigel 5
Lincoln .....15	Garfield 9	Woodward 5
Glasgow .....14	Harney Heights... 9	Dessalines 4
Meramec .....14	Hodgen 9	Harrison 4
Simmons .....14	L'Ouverture 9	Long 4
Canterbury .....13	Neosho 9	Mt. Pleasant..... 4
Crow .....13	Ashland 8	Blair 3
Farragut .....13	Clifton Heights... 8	Carr 3
Marquette .....13	Columbia 8	Humboldt 3
Pestalozzi .....13	Emerson 8	Lindenwood 3
Wyman .....13	Field 8	Oak Hill..... 3
Adams .....12	Fremont 8	Bryan Hill..... 2
Clinton .....12	Howard 8	Devonshire 2
Cote Brillante...12	Irving 8	Hamilton 2
Franklin .....12	Lafayette 8	Lowell 2
Froebel .....12	Penrose 8	Shenandoah 2
Longfellow .....12	Carr Lane 7	Webster 2
Rock Spring.....12	Clark 7	Ames 1
Blow .....11	Divoll 7	Kingshighway 1
Fanning .....11	Lyon 7	Delany 0
Grant .....11	Clay 6	Henry 0
Marshall .....11	Douglas 6	Wheatley 0

NON-PROMOTIONS—THIRD QUARTER

Froebel .....19	Rock Spring..... 7	Clifton Heights... 2
Ashland .....18	Bates 6	Field 2
Bircher .....18	Clinton 6	Harrison 2
Old Penrose.....18	Douglas 6	Kingshighway 2
Adams .....16	Farragut 6	Mt. Pleasant..... 2
Ames .....16	Franklin 6	Mullanphy 2
Woodward .....16	Marquette 6	Riddick 2
L'Ouverture .....15	Dozier 5	Wyman 2
Banneker .....14	Elliot 5	Benton 1
Cote Brilliante...14	Penrose 5	Carr 1
Longfellow .....14	Stix 5	Chouteau 1
Irving .....13	Arlington 4	Garfield 1
Shaw .....13	Clark 4	Grant 1
Gratiot .....12	Emerson 4	Howard 1
Jefferson .....12	Fremont 4	Lafayette 1
Madison .....12	Harney Heights... 4	Neosho 1
Pestalozzi .....12	Henry 4	Roe 1
Charless .....11	Hodgen 4	Shenandoah 1
Dumas .....11	Jackson 4	Sigel 1
Monroe .....11	Mann 4	Blair 0
Clay .....10	Marshall 4	Carondelet 0
Lindenwood .....10	Meramec 4	Cupples 0
Long .....10	Pope 4	Delany 0
Simmons .....10	Shepard 4	Des Peres..... 0
Carr Lane..... 9	Washington 4	Dessalines 0
Hempstead 9	Bryan Hill..... 3	Devonshire 0
Webster 9	Columbia 3	Gardenville 0
Baden 8	Cottage Avenue... 3	Garnett 0
Blow 8	Crow 3	Hamilton 0
Lyon 8	Fanning 3	Lowell 0
Canterbury 7	Glasgow 3	Oak Hill..... 0
Divoll 7	Humboldt 3	Sherman 0
Lincoln 7	Laclede 3	Wheatley 0
O'Fallon 7	Walnut Park..... 3	

NON-PROMOTIONS—FOURTH QUARTER

Irving .....26	Clifton Heights....11	Sherman 6
Crow .....19	Field .....11	Woodward 6
Des Peres.....19	Froebel .....11	Carr 5
Adams .....18	Hodgen .....11	Charless 5
Dumas .....18	Dozier .....10	Clinton 5
Fremont .....18	Hempstead .....10	Stix 5
Eliot .....17	Henry .....10	Washington 5
Neosho .....17	Jackson .....10	Webster 5
Ashland .....16	Arlington 9	Divoll 4
Clark .....16	Howard 9	Douglas 4
Clay .....15	Lincoln 9	Farragut 4
Franklin .....15	Long 9	Humboldt 4
Harney Heights...15	Longfellow 9	Lowell 4
Laclede .....15	Roe 9	Columbia 3
Madison .....15	Bates 8	Lafayette 3
Shepard .....15	Dessalines 8	Shenandoah 3
Simmons .....15	Emerson 8	Bryan Hill..... 2
Blow .....14	Fanning 8	Cupples 2
Kingshighway ...14	Mann 8	Grant 2
L'Ouverture .....14	Marquette 8	Gratiot 2
Meramec .....14	Oak Hill..... 8	Harrison 2
Bircher .....13	Pope 8	Lyon 2
Cote Brilliante...13	Riddick 8	O'Fallon 2
Glasgow .....13	Rock Spring..... 8	Ames 1
Old Penrose.....13	Canterbury 7	Blair 1
Wyman .....13	Garfield 7	Carr Lane..... 1
Baden .....12	Sigel 7	Cottage Avenue... 1
Banneker .....12	Benton 6	Garnett 1
Marshall .....12	Chouteau 6	Delany 0
Monroe .....12	Hamilton 6	Devonshire 0
Mt. Pleasant....12	Jefferson 6	Gardenville 0
Shaw .....12	Mullanphy 6	Lindenwood 0
Walnut Park....12	Penrose 6	Wheatley 0
Carondelet .....11	Pestalozzi 6	

In all of these cases there must be some reason why the practice of one school differs so radically from the practice of the system as a whole and from the practice of other individual schools. Sometimes a very small school differs from the school system for reasons that can properly be traced to the individual attention given in these small schools to the various pupils; but in general it must be pointed out that there is no complete justification for the radical differences in practice between the different schools. Furthermore, if we scrutinize the charts for the second, third and fourth quarters, we find that the practice of a single school in different quarters is variable and we find more and more ground in the successive tables for the inquiry whether the matter of non-promotion has in any wise been standardized in the schools. Every time a child fails of promotion it means that some teacher and some principal have passed judgment on that child and have required of the child certain types of work demanded in the course of study as administered in that school. There ought to be no possibility of a mistake. If the judgment of a teacher is adverse to a child, that judgment ought to be based upon some clearly recognized principle of requirement. There is grave danger that in a large system like that of St. Louis there shall be mere capriciousness of administration. Some individual teacher has, or supposes that she has, high ideals of achievement. She imposes on the children in her grade a higher requirement than is imposed by her neighbor. Conversely, there are evidently some teachers in the school system who are not clear as to the standards of non-promotion. They are advancing all of the children. It is hardly to be believed that they are administering the course of study so much better than their neighbors who fail students that there is no necessity whatsoever of eliminating some students who are having difficulty with the course.

Just as we find the various quarters showing differences of fundamental type in the matter of non-promotion, so we find in tables that are compiled to show the differences in practice

TABLE III.

TWO-QUARTER PROMOTIONS—FIRST QUARTER

Lindenwood .....16	Laclede 5	Madison 2
Lafayette .....15	Shenandoah 5	Marshall 2
Marquette .....14	Shepard 5	Meramec 2
Roe .....13	Baden 4	Monroe 2
Cote Brilliante....12	Carr Lane..... 4	Mullanphy 2
Garnett .....10	Charless 4	O'Fallon 2
Columbia 9	Clifton Heights... 4	Pestalozzi 2
Field 9	Crow 4	Canterbury 1
Hodgen 9	Dozier 4	Carr 1
Bryan Hill..... 8	Jackson 4	Chouteau 1
Clay 8	Pope 4	Cottage Avenue ... 1
Divoll 8	Walnut Park 4	Franklin 1
Garfield 8	Ashland 3	Gardenville 1
Washington 8	Banneker 3	Grant 1
Ames 7	Blair 3	Harney Heights... 1
Arlington 7	Des Peres 3	Humboldt 1
Clark 7	Eliot 3	Jefferson 1
Mann 7	Hempstead 3	Lincoln 1
Neosho 7	Howard 3	Lyon 1
Woodward 7	Kingshighway 3	Shaw 1
Carondelet 6	Riddick 3	Sherman 1
Clinton 6	Rock Spring 3	Wyman 1
Dessalines 6	Sigel 3	Adams 0
Irving 6	Benton 2	Cupples 0
Longfellow 6	Blow 2	Delany 0
Oak Hill..... 6	Devonshire 2	Dumas 0
Stix 6	Douglas 2	Hamilton 0
Bates 5	Emerson 2	L'Ouverture 0
Farragut 5	Fanning 2	Mt. Pleasant 0
Fremont 5	Glasgow 2	Penrose 0
Froebel 5	Henry 2	Simmons 0
Gratiot 5	Long 2	Webster 0
Harrison 5	Lowell 2	Wheatley 0

TWO-QUARTER PROMOTIONS—SECOND QUARTER

Cupples .....28	Glasgow 6	Monroe 2
Shenandoah .....21	Irving 6	Rock Spring 2
Dozier .....16	Long 6	Roe 2
Hamilton .....16	Cote Brilliante.... 5	Webster 2
Clark .....15	Henry 5	Carondelet 1
Marquette .....15	Laclede 5	Chouteau 1
Mann .....14	Lafayette 5	Dessalines 1
Neosho .....13	Banneker 4	Fanning 1
Benton .....12	Eliot 4	Jefferson 1
Gardenville .....12	Field 4	Lyon 1
Mt. Pleasant .....12	Garfield 4	Madison 1
Penrose .....12	Howard 4	Pestalozzi 1
Franklin .....10	Pope 4	Riddick 1
Froebel .....10	Shaw 4	Simmons 1
Harrison .....10	Clay 3	Ames 0
Arlington 9	Crow 3	Baden 0
Blair 9	Des Peres 3	Bates 0
Emerson .....9	Douglas 3	Canterbury 0
Farragut 9	Harney Heights... 3	Carr 0
Grant 9	Jackson 3	Clifton Heights... 0
Hempstead 9	Kingshighway 3	Cottage Avenue... 0
Hodgen 9	Longfellow 3	Delany 0
Stix 9	Marshall 3	Devonshire 0
Ashland 8	Sigel 3	Dumas 0
Mullanphy 8	Walnut Park..... 3	Garnett 0
Shepard 8	Washington 3	Humboldt 0
Blow 7	Bryan Hill 2	Lincoln 0
Charless 7	Clinton 2	Lindenwood 0
Oak Hill 7	Columbia 2	Meramec 0
Woodward 7	Divoll 2	O'Fallon 0
Adams 6	Gratiot 2	Sherman 0
Carr Lane 6	L'Ouverture 2	Wheatley 0
Fremont..... 6	Lowell 2	Wyman 0

TWO-QUARTER PROMOTIONS—THIRD QUARTER

Canterbury .....31	Lafayette 6	Eliot 2
Neosho .....19	L'Ouverture 6	Garfield 2
Divoll .....18	Mullanphy 6	Grant 2
Blair .....16	Ames 5	Hamilton 2
Rock Spring .....16	Banneker 5	Harney Heights... 2
Irving .....13	Clifton Heights... 5	Hempstead 2
Bates .....11	Crow 5	Henry 2
Harrison .....11	Franklin 5	Lowell 2
Longfellow .....11	Gardenville 5	O'Fallon 2
Marquette .....11	Meramec 5	Pope 2
Shepard .....11	Monroe 5	Shaw 2
Bryan Hill .....10	Sherman 5	Shenandoah 2
Clay .....10	Clinton 4	Sigel 2
Cote Brilliante ...10	Fanning 4	Walnut Park..... 2
Dessalines .....10	Fremont 4	Chouteau 1
Dozier .....10	Froebel 4	Cottage Avenue ... 1
Oak Hill .....10	Howard 4	Glasgow 1
Stix .....10	Jefferson 4	Jackson 1
Carr Lane 9	Penrose 4	Kingshighway 1
Charless 9	Old Penrose..... 4	Madison 1
Clark 9	Washington 4	Wheatley 1
Roe 9	Webster 4	Wyman 1
Field 8	Adams 3	Bircher 0
Mann 8	Carr 3	Delany 0
Baden 7	Carondelet 3	Devonshire 0
Blow 7	Des Peres 3	Dumas 0
Douglas 7	Hodgen 3	Garnett 0
Emerson 7	Long 3	Gratiot 0
Farragut 7	Riddick 3	Humboldt 0
Lyon 7	Simmons 3	Laclede 0
Mt. Pleasant..... 7	Arlington 2	Lincoln 0
Pestalozzi 7	Ashland 2	Lindenwood 0
Woodward 7	Benton 2	Marshall 0
Columbia 6	Cupples 2	

TWO-QUARTER PROMOTIONS—FOURTH QUARTER

Shenandoah .....38	Gratiot 4	Grant 1
Garfield .....19	Harney Heights... 4	Howard 1
Mann .....15	L'Ouverture 4	Jefferson 1
Farragut .....14	Penrose 4	Longfellow 1
Emerson .....12	Benton 3	Meramec 1
Hamilton .....12	Des Peres 3	Mt. Pleasant..... 1
Lafayette .....12	Douglas 3	Rock Spring 1
O'Fallon .....12	Eliot 3	Roe 1
Divoll .....11	Field 3	Simmons 1
Dozier .....11	Mullanphy 3	Walnut Park..... 1
Marquette .....11	Riddick 3	Ashland 0
Pestalozzi .....11	Washington 3	Bircher 0
Stix .....10	Ames 2	Carr 0
Bates 9	Arlington 2	Chouteau 0
Charless 9	Blair 2	Delany 0
Oak Hill 9	Blow 2	Dessalines 0
Cupples 8	Bryan Hill 2	Devonshire 0
Clay 7	Carr Lane 2	Dumas 0
Crow 7	Hempstead 2	Fremont 0
Froebel 7	Hodgen 2	Garnett 0
Irving 7	Jackson 2	Henry 0
Shepard 7	Laclede 2	Humboldt 0
Clinton 6	Long 2	Kingshighway 0
Clark 6	Lyon 2	Lincoln 0
Monroe 6	Marshall 2	Lindenwood 0
Clifton Heights... 5	Pope 2	Lowell 0
Cote Brilliante ... 5	Wyman 2	Madison 0
Gardenville 5	Adams 1	Neosho 0
Harrison 5	Baden 1	Old Penrose 0
Sigel 5	Banneker 1	Shaw 0
Webster 5	Carondelet 1	Sherman 0
Canterbury 4	Cottage Avenue... 1	Wheatley 0
Columbia 4	Fanning 1	Woodward 0
Glasgow 4	Franklin 1	

with regard to two-quarter promotions that there are wide differences between the different schools. During the first quarter Lindenwood promoted by two quarters 16 per cent of the pupils, while a very large number of schools, including Adams, Cupples, Delany, Dumas and others double-promoted none of the children. Some of the schools that double-promoted none of the children evidently are working under adverse social conditions, but, taken in the main, there is hardly a complete justification for the discrepancy shown in this table. The discrepancies in the second quarter are even more marked than in the first; and so during the third quarter there are very wide differences between the schools.

Following this general statement with regard to the different schools and their practices in the matter of two-quarter promotion, it may be well to present some fuller tables that will contrast sharply the practices of various individual schools. This contrast is especially striking in view of the fact that the practice with regard to non-promotions and two-quarter promotions does not seem to exhibit any single plan of relationship throughout the school system. For example, there are a number of schools in which the percentage of non-promotions is high, while the percentage of double promotions is relatively low. Examples of this sort of situation can be found in the Glasgow, Adams and Madison Schools. The case of Glasgow, which is the most extreme, is given in detail in Table IV.

On the other hand, there are numerous schools in which the relation is exactly the reverse. In such schools the percentage of non-promotions is low, while the percentage of two-quarter promotions is high. Such schools are Blair, Bryan Hill, Harrison, Dozier, and others. Blair may be taken as a typical example of this class. The details are exhibited in Table VI.

Schools such as Clark, Clay, Irving, Shepard, Cote Brillante, and others show a high percentage of both non-promotions and two-quarter promotions. Clark may be taken as a typical case and is given in detail in Table VII.

TABLE IV.

GLASGOW SCHOOL

Grade	Double Promotions				Non-Promotions			
	1	2	3	4	1	2	3	4
8-4 .....	..	0	..	0	..	0	..	2
8-3	0	..	0	..	4	..	0	..
8-2 .....	..	0	..	0	..	0	..	0
8-1	0	3.1	0	..	7	3	0	..
7-4 .....	..	0	..	0	..	3	..	2
7-3	0	..	0	..	4	..	0	..
7-2 .....	..	0	..	0	..	0	..	0
7-1	40	..	0	..	4	4	0	..
6-4 .....	..	0	..	0	..	0	..	2
6-3	0	..	10	0	0	..	2	0
6-2 .....	..	0	0	88	..	7	4	4
6-1	0	0	..	83	0	0	..	17
5-4	0	0	0	0	9	0	8	14
5-3	0	0	0	0	22	56	3	9
5-2	0	0	0	0	0	7	0	4
5-1	0	0	0	0	0	0	0	8
4-4	0	0	0	0	0	3	2	12
4-3	0	0	8.3	0	27	6	0	92
4-2	0	25	0	0	2	0	0	37
4-1	4.3	0	0	0	4	17	0	7
3-4	0	0	0	0	0	2	0	19
3-3	0	0	0	0	0	8	0	61
3-2	0	0	0	0	16	11	0	0
3-1	0	0	0	0	32	15	0	0
2-4	0	0	0	0	4	42	0	6
2-3	0	0	0	0	9	48	0	0
2-2	0	0	0	0	0	4	0	11
2-1	0	0	0	0	47	23	0	15
1-4	0	0	12	0	34	0	0	9
1-3	0	0	0	0	100	2	3	6
1-2	0	0	0	0	21	12	0	3
1-1	0	0	0	0	61	34	37	5

TABLE V.

HUMBOLDT SCHOOL

Grade	Double Promotions				Non-Promotions			
	1	2	3	4	1	2	3	4
8-4 .....	..	0	..	0	..	0	..	0
8-3	0	..	0	..	10	..	0	..
8-2	38	0	0	..	63	0	0	..
8-1	0	..	0	0	0	..	0	0
7-4	0	0	0	0	0	0	0	0
7-3 .....	..	0	..	0	..	0	..	0
7-2	0	0	0	0	0	0	0	0
7-1	0	0	0	0	0	0	0	0
6-4	0	0	0	0	0	0	0	0
6-3	0	0	0	0	0	4.3	4.5	8.7
6-2	0	0	4.5	0	4.3	0	0	0
6-1	0	0	0	0	4.8	0	0	10
5-4	0	0	0	0	4	0	0	4.8
5-3	0	0	0	0	0	0	10	0
5-2	0	0	0	0	8.5	0	4.8	0
5-1	0	0	0	0	7.2	13	11	24
4-4	3.8	17	0	0	12	4.2	4.2	10
4-3	0	0	0	0	14	18	0	9.5
4-2	0	0	0	0	7	12	19	16
4-1	0	0	0	0	4.2	0	0	5.5
3-4	0	..	0	0	0	..	8.5	5.8
3-3	0	0	0	0	4.8	1.2	0	0
3-2	0	0	0	0	0	0	0	0
3-1	0	0	0	0	1.9	3.7	0	0
2-4	0	0	0	0	3.8	0	4.4	4.5
2-3	0	0	0	0	4.2	4	3.4	8.3
2-2	0	0	0	3.6	0	8	7.7	7.1
2-2	0	0	0	3.6	0	8	7.7	7.1
1-4	0	0	0	0	8	4	0	0
1-3	0	0	0	0	0	3.6	0	9.5
1-2	0	0	0	0	0	0	0	0
1-1	0	0	0	0	0	12	0	0

TABLE VI.

BLAIR SCHOOL

Grade	Double Promotions				Non-Promotions			
	1	2	3	4	1	2	3	4
8-4 .....	..	0	..	3	..	0	..	0
8-3	0	..	4	..	0	..	0	..
8-2 .....	..	0	..	0	..	0	..	0
8-1	0	..	0	..	0	..	0	..
7-4 .....	..	0	..	0	..	0	..	0
7-3	0	23	0	0	0	0	0	0
7-2	21	0	17	0	0	0	0	0
7-1	0	21	0	25	0	0	0	0
6-4	0	0	55	0	0	0	0	0
6-3	0	..	67	..	0	..	0	..
6-2	0	0	..	0	0	0	..	0
6-1	0	0	0	0	0	0	0	0
5-4	0	20	0	0	0	0	0	0
5-3	0	7	26	0	0	0	0	0
5-2	4	28	23	0	0	0	0	0
5-1	0	45	32	0	0	0	0	0
4-4	18	42	37	0	0	0	0	0
4-3	4	40	37	..	0	0	0	..
4-2	0	38	..	0	0	0	..	0
4-1	0	..	35	0	0	..	0	0
3-4 .....	..	17	0	0	..	0	0	0
3-3	0	12	0	0	0	4	0	0
3-2	0	0	12	0	0	0	0	0
3-1	25	5	13	0	0	0	0	0
2-4	0	0	0	11	0	0	..	0
2-3	0	0	0	9	0	0	0	0
2-2	0	3	50	9	0	0	0	0
2-1	12	..	33	0	0	..	0	0
1-4 .....	..	0	50	0	..	0	0	0
1-3	0	0	0	3	0	0	0	0
1-2	0	1	0	0	0	9.6	0	12.5
1-1	0	0	0	..	0	100	0	..

TABLE VII.

CLARK SCHOOL

Grade	Double Promotions				Non-Promotions			
	1	2	3	4	1	2	3	4
8-4 .....	..	0	0	0	..	1	0	6
8-3	0	..	..	..	3	..	..	..
8-2 .....	..	22	..	0	..	6	..	16
8-1	0	..	0	0	0	..	0	9
7-4	0	0	0	8	17	0	3	27
7-3	0	0	0	0	0	0	0	33
7-2	0	12	0	0	0	18	27	17
7-1	0	0	22	39	0	15	17	25
6-4	0	20	0	10	0	4	3	12
6-3	33	46	12	57	7	8	0	11
6-2	13	0	0	0	4	11	0	21
6-1	16	49	0	0	2	12	4	13
5-4	2	50	25	0	0	0	0	22
5-3	0	100	20	4	0	0	0	0
5-2	17	0	30	6	0	3	0	11
5-1	0	25	7	0	0	8	5	14
4-4	0	17	13	0	9	2	0	15
4-3	5	8	29	0	0	0	0	26
4-2	3	8	4	0	0	15	0	7
4-1	0	4	0	13	7	8	0	4
3-4	0	21	31	0	0	6	15	19
3-3	1	0	0	0	0	20	0	10
3-2	19	..	0	0	0	..	0	25
3-1	23	3	0	0	0	9	0	38
2-4	44	0	24	21	0	6	0	0
2-3	0	0	20	0	0	0	0	5
2-2	15	0	0	0	25	0	0	11
2-1	0	0	0	0	25	0	0	6
1-4	0	0	0	0	0	12	10	21
1-3	0	0	48	..	8	27	0	..
1-2	33	0	..	0	0	8	..	17
1-1	0	0	0	0	52	24	52	48

Finally, there are a few schools in which the percentage of non-promotions and two-quarter promotions is very low in both cases. The most striking example of this is Humboldt, which is given in detail in Table V.

TABLE VIII.

NON-PROMOTIONS

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Clay	25	6	10	15
Adams	21	12	16	18
Shaw	21	16	13	12
Columbia	13	8	3	3
Cote Brilliante	8	12	14	13
Hamilton	3	2	0	6
Hodgen	2	9	4	11
Webster	13	2	9	5

TABLE IX.

TWO-QUARTER PROMOTIONS

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Columbia	9	2	6	4
Hamilton	0	16	2	12
Cote Brilliante	12	5	10	5
Hodgen	9	9	3	2
Webster	0	2	4	5
Marquette	14	15	11	11

The fact that these various types of relationship between two-quarter promotion and non-promotion appear in the schools of the system demonstrates that there is no general principle which is followed throughout all of the schools. One might reasonably expect that if a school finds it necessary to fail very few children it would, on the other hand, find it possible to advance many of its children more rapidly than the

normal rate. Examples have been given above to show that there is, however, no general relationship of this type.

There is one other method of summarizing the facts to which reference is here made. Instead of dealing with the full details we may take the percentage of non-promotions for the whole school according to the different quarters. We then get certain typical cases, as in Table VIII.

From this table it will be seen that Webster has two quarters in the year during which the percentage of non-promotions is high. Exactly the opposite relation appears in Hodgen. Here it is the second and fourth quarters in which non-promotions are high. Evidently the course of study cannot be the chief determining factor in variations of these two different types. The other schools in the list show other variations. Thus we see that in Columbia non-promotions are heavy during the first half of the year and very light during the second half, whereas the situation is the reverse in Cote Brillante. In Clay, Adams, and Shaw the largest percentage of non-promotions appears during the first quarter of the year. In Hamilton the distribution of non-promotions is relatively very low and it is the last quarter of the year in which the percentage is high.

Variations in regard to two-quarter promotions are hardly less striking than the variations in regard to non-promotion. Table IX gives a number of schools which were included in the foregoing table and one which was not in that table. Marquette is included in this table for the sake of showing how high a percentage of two-quarter promotions may appear in a school. The practice of Marquette in this respect is wholly different from the practice of Webster. Webster and Hodgen are to be sharply contrasted. In Webster the percentage of two-quarter promotions increases steadily throughout the year, although it does not reach at any time a high level. In Hodgen, on the other hand, the percentage decreases sharply during the last two quarters of the year. Hamilton gives a very striking example of a kind of practice which does not

appear in any of the other schools. Here double promotions are not made during the first term at all, but appear in large numbers during the second term. There is evidently a principle of alternation, since the third quarter, like the first, has a very low percentage and the fourth quarter, like the second, has a high percentage. Cote Brillante exhibits alternation again, but of a different type. Furthermore, if these various alternations in the different quarters of the year are compared with the alternations in non-promotion, it will be seen that there is no fixed relationship between the two types of administration in the same school.

The conclusions which can be drawn from the foregoing study are very obvious. Taking the system of St. Louis as a whole, the four-quarter plan works admirably and carries the children through the grades in the aggregate in a way which economizes the resources of the school and indicates a proper adjustment of the school problem to the needs of children. This aggregate showing, however, is seriously obscured when we come to deal with the practices of individual schools. To be sure, there is a very large probability that each school faces a social problem which is different from the social problem confronting any other school. There must be justification in many quarters for an omission of two-quarter promotions. On the other hand, if the two-quarter promotions must be omitted because of adverse social conditions, there must be a correspondingly strong demand for either a modification of the course or non-promotion of children who are unfavorably related to their school work. It may even be legitimate for a given school to depart entirely from the practice of the system as a whole in this matter of non-promotions and two-quarter promotions. In that case the relation of the elementary school to the high school ought to be a subject of grave study, and, furthermore, there ought to be a clear definition of the grounds for a departure on the part of the single school from the practice of the system as a whole. The probabilities are that we have in this matter of non-promotions and two-quarter

promotions one of the very best indications of the efficiency of a principal. The practice of a school building will undoubtedly be very largely influenced by the attitude of the principal. Where a principal fails to take advantage of the flexibility of the course of study and the scheme of promotion thus provided, the organization of his school will suffer as contrasted with some other school where the flexibility of the St. Louis system is recognized and used to its full limit in advancing the children through their work in the schools.

The material which is canvassed for this section of the report has never been collected at the central office and been made the subject of a complete study. It is hoped that the foregoing analysis of this material will suggest to the administrative officers the desirability of studies of this matter through a period of years. There is possibility that the statements made with regard to individual schools in the foregoing paragraphs would have to be modified if the results were at hand for a period of years. On the other hand, it is altogether legitimate to assume that the comparative study of successive years would bring out the fact that in some schools there is a settled and well-recognized policy in the matter of non-promotions, while in other schools the accidents of school organization are very conspicuous in variations which would be shown in the matter of non-promotions and two-quarter promotions. A comparison of the records of the same school for a period of years would thus reinforce very powerfully the favorable or unfavorable judgment of the central office with regard to the activities of a given principal.

Furthermore, the principal would be in possession of a body of material by which he could check up the fluctuations in the achievements of children and in the performances of teachers. Teachers ought to recognize the fact that they are in a large measure responsible for the progress of children through the schools. There is an artificial possibility of putting everybody through the schools if teachers are told that they are responsible for non-promotions. St. Louis has, however, in its double

plan of two-quarter promotions and non-promotions a very good check on any such artificial tendencies. Any teacher who simply stopped non-promotions, but did not show in a corresponding degree some modification of practice in the matter of double promotions, would be open to careful scrutiny because of the lack of adjustment to the scheme as a whole. There is very little danger, therefore, that a careful study of this matter in the St. Louis schools would produce any formal results.

It may be said that very few systems in the country have faced frankly the problem of double promotions of children in the grades. Here and there the rapid advancement of bright children has been advocated, but again St. Louis has an opportunity, in view of the flexibility of its system, to deal with a large school problem in a very productive way. There can be no doubt at all that there is a tendency in some schools to hold back children who ought to be advanced more rapidly than the normal. The length of the total school training of bright children is thus protracted beyond the point where it is legitimate to hold them—at least in elementary work. Children who can go into the high school and properly carry the work of the high school at an early age are shown by all of the recent investigations to be the children who succeed best of all in carrying this high school work. Indeed, it is the younger students who succeed best in any grade of institution. This means merely that those children who get on well in the grades are the youngest children in the grades. We cannot argue that it is desirable to reduce to an unlimited extent the length of time that a pupil spends in the grades, but it does call our attention very pointedly to the fact that it is desirable to accelerate children through the grades at as fast a pace as can be set up and yet insure a successful completion of the work required for that stage of the child's education.

The question may be raised what additional machinery would be necessary in the school system to provide for the type of study which is suggested in this report. The answer

is that a careful canvassing of each school ought to be the duty of the principal. Reports could be sent to the central office in such form that a week of work by an expert clerk would compile the results for a year. In all probability it would be advantageous to compile the results each quarter. This would not require any great length of time and would hardly be an appreciable addition to the office routine. The check, however, which would be furnished by such a study on the practices of individual schools would be immeasurably valuable in determining the efficiency of administration in these schools.

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CHAPTER X

OBSERVATIONS OF ELEMENTARY SCHOOL INSTRUCTION

BY GEO. A. MIRICK

*Summary*¹

Mr. Mirick's report is based on observation of classroom work. Its favorable judgments are supported by the tests in reading, arithmetic, and penmanship, which will be reported in full in later sections of the report. The criticisms which he makes are, for the most part, anticipated in the reports on the course of study which have been prepared by the committees of the St. Louis system itself. The following summary of the report touches on the chief points.

Mr. Mirick visited classes in the elementary schools and held numerous conferences with school officers of all grades.

The new course of study which is being worked out is affecting the work of the schools favorably. It is even now leading to the introduction of new material and to improvement in methods of presentation. The new course should be adopted as soon as possible in order to bring about liberal changes in such subjects as ethics and spelling, and readjustment in others.

In the kindergartens of the city there is a growing recognition of the importance of a close relation between kindergarten work and primary work. Next year supervision of the kindergartens and primary grades is to be unified, and the harmonious and productive relation will be further strengthened. Wherever the kindergarten fails to cultivate forward looking physical and mental control, it is open to criticism.

¹ By Chas. H. Judd.

Examples are given in detail of good adjustments and faulty adjustments in these matters.

In describing the work of the grades it is to be noted that the various schools exhibit different plans of organization and operation. The building is in an important sense the unit. Some buildings have departmentalized their work to a high degree, others have little departmental work. An increase in departmental work would render unnecessary the extension of the present plan of special teachers in penmanship, drawing, music, etc.

Many of the classes visited exhibited methods of recitation in which the children were drawn out and induced to assume the initiative. Where, on the other hand, the teacher compelled the pupil to follow a rigid line of thought determined by the teacher and the text, the results are to be criticised as tending toward formalism. Examples are given. In presenting these examples typical class exercises in each of the subjects are reviewed and comments are made on the organization of each division of the course of study.

In the discussion of several of the subjects, especially reading, a sharp distinction is drawn between the primary grades and the grammar grades. The latter are found to be less satisfactory in their work. The correction which is recommended for this situation is increased supervision by the principals. The collateral recommendation is made that the principals be encouraged to concentrate on this problem by relieving them in some degree of the clerical duties which they now perform.

In general the technique of teaching in the schools is to be commended. Their equipment is good. The spirit of the pupils is good.

Attention is drawn to the necessity of developing a more definite general standard of promotion throughout the schools and of increasing the emphasis on the relation of school work to civic life.

ELEMENTARY SCHOOL INSTRUCTION

I. GENERAL PLAN OF PROCEDURE IN MAKING THE SURVEY

Inasmuch as nothing that can be seen in a system of schools or in a schoolroom can be understood unless it be thought of in relation to the purposes of those who are in charge of the system or of the schoolroom, I made it my first business to confer with the assistant superintendent of a district before going into the schools under his supervision.

There are four assistant superintendents, each in charge of a district.

I was able to spend three days in each district and three days in visits to schools without regard to district lines. One-half day was given to the Educational Museum and one-half day to conferences on the proposed changes in the courses of study. In all, sixteen school-days were spent in the classrooms.

A detailed statement of classroom observations and comments is given on the cards that accompany this report. They contain the data on which the more general statements of this report are based.

During the first day of my visits to the schools the principals accompanied me to the classrooms. By discussing the various situations met with, I was able to discover general tendencies and to learn that certain practices were of recent origin and that others were soon to be discontinued in response to the influences set at work by the revision of the courses of study.

After the first day I visited the classrooms alone except in two or three instances when the principal accompanied me. At most of the buildings I was able to confer with the principal before or after my classroom visits, thereby gaining some idea of local conditions and the points of view that were prevailing locally.

I was able to confer briefly with many teachers. As my purpose was to see what was going on under normal conditions, the work in progress was seldom disturbed. My conferences with teachers were therefore at the close of recitations and at recess. These conferences with teachers were very enlightening. With scarcely an exception the teachers showed that they were intelligent students, not only of their own particular problems, but also of the large problems that are being so fully discussed and so ably solved in the committees directly responsible for formulating the plans for the new courses of study.

With the help of the assistant superintendents those buildings were selected for visiting which represented typical situations from the standpoint of community character or of administrative and educational quality. As noted before, other buildings also were visited as opportunity offered.

In each building visited I sat through an entire recitation in several different rooms (2-10 rooms). The length of stay in other rooms varied from two or three minutes to ten or fifteen minutes. The length of each observation was governed by the nature of the work then going on.

In a few instances only was a change made in the regular program of the school visited. My purpose was to see and hear what was in progress at the time I called, believing that in the course of all my visits I should see samples of most of the phases of school work. There were some exceptions to this rule, however. At the suggestion of one principal several dramatizations were observed; at the suggestion of another, phases of reading were taken up; of another oral and class compositions were substituted for the regular program; but for the most part the regular work was seen.

In a few rooms I asked pupils questions to discover their grasp of a subject, their method of studying a lesson, their sources of information, etc., but again, with these few exceptions, I was, as far as possible, an unobtrusive observer of the normal school situations and procedures.

After the schools in the district of an assistant superintendent had been visited, I again conferred with him, not so much regarding particular buildings and rooms as regarding phases of work observed. By these conferences, again, I was able to see the work more in perspective and in relation to the underlying influences that are modifying school practices throughout the city.

I have also studied with some care and much interest the three latest reports of the Superintendent of Schools as they relate to instruction. These reports, being very largely statements of the methods of educational administration, of the ways by which theory and practice are determined, of educational equipments in various schools, and of the unsolved problems that have been formulated and are being generally discussed—these reports reveal in a large way and very definitely the scholarly quality, the educational insight, the pedagogic skill, and the fine professional spirit of which one becomes conscious as he goes about in the St. Louis schools and meets the teachers, the principals, and the other school directors.

II. THE PROPOSED CHANGES IN INSTRUCTION IN THE ELEMENTARY SCHOOLS

For two years teachers, principals, superintendents and special directors have been making an intensive study of the school curriculum. As a result of these studies many changes in the procedure of classroom work are to be recommended and will be put into operation. The effects of the study are already evident in much of the work observed. Here and there the forthcoming recommendations have been embodied in an experimental way in the work of the schools. Very generally the liberal spirit of the recommendations has been accepted and the present course is being administered in a way which reflects the expected advantages of the new course.

There will be a more complete review and summary of the work of the various committees in another part of the Survey.

It is not necessary, therefore, to do more at this point than to express agreement with the trend of all the work of the committees. Furthermore, it is appropriate to point out that this deliberate method of arriving at a new course of instruction has certain great advantages. The system has time to grow up to the new ideas. The teachers know what is coming and they know also the reasons for the new course. There is thus a natural evolutionary process within the schools. They are being changed from within, not by the imposition of dogmas imposed from without.

I am so entirely in sympathy with this process that my point of view has been largely determined by it. I have been more interested in noting indications of the newer tendencies than in criticizing the survival of the old practices. The evolutionary process is slower than other processes and its effects are not likely to be equally evident at every point in the school life, but the results are more wholesome and permanent. When, as in ethics, in spelling, in grammar, in reading, I have found practices quite out of harmony with the educational principles and purposes set forth in the reports, I have been led to inquire of the teacher or principal what his judgment was in the matter, and I have almost invariably found that these practices were not defended but that they were being continued until complete recommendations of the Special Committees make plain the better way. In such cases I have recorded my observations and have criticized the practices which seem to me to be too long retained in the schools.

III. KINDERGARTEN SCHOOLS

The kindergarten schools in St. Louis are as much a part of the school system as are the first and eighth grade schools. At every school center there is a kindergarten and, wherever a new center is established, the kindergarten and first grade are started first. This is as true of colored as of white schools.

The kindergarten room is the most commodious, most artistic and best equipped room in the building. Some of these rooms,

indeed, a large percentage of those which I visited, are beautiful.

The life of these schools exemplifies the best kindergarten traditions. The devotional exercises are spiritual. The games and social activities have the recreative and humanizing values that one expects to find in good kindergarten schools.

I was concerned to find out what particular measures were being taken to prepare those pupils who are to enter the first grade in September for the somewhat more restricted life and for the greater mental and physical control that would be expected of them in the primary grades.

I found the following indications that these new prospective conditions were not being ignored:

1. Each kindergarten school is divided into groups according to maturity and ability. In the large schools there were three such groups.

2. The assignment of work was graded according to the group abilities, i. e., more difficult "occupation" tasks were planned for the most mature group than for the others. The exercises were graded.

3. In several schools I found that in those games in which the purpose was avowedly to develop physical control, there was actually in the playing of the game an effort towards more complete and accurate control. In one exercise given for the development of physical rhythmic motion, the increase in control as the exercise progressed was evident. In another school where such exercises were evidently realizing their purpose, the teacher said that she gave certain children additional practice in tossing a ball *straight* into the air, in catching a ball thrown accurately by herself or assistant, in throwing a ball against a definite area of the blackboard. The exercises were, in a measure, progressive.

This clearness of perception of the definite means of reaching a definite educational end and was not, however, apparent in all the schools I visited. In some schools observed, the unrestricted, thoughtless, play spirit seemed to be rather indis-

criminally present in all the activities. The exercises were a kind of universal and unorganized recreation.

4. In several schools there was an evident purpose to secure a larger self-control and *mental* concentration in the activities with blocks and paper in the group of older pupils than in that of the younger. One exercise in particular was indicative of what is possible in shaping kindergarten training in the direction of first grade. Each pupil and the teacher had a box of small blocks. Under direction the pupils built a fence two blocks high and eight blocks long. They divided the fence in the middle, four blocks on each side, for a gate. They built gate and end posts three and four blocks high. Several modifications of the fence were made, the teacher and pupils using the terms *half*, *quarter*, and counting to sixteen. Making a few suggestions and inspiring others to make some, the exercise was turned into a free building exercise. It was evident that the simple number lesson was within the mental capacity of the pupils and the quiet, but effective, control of the teacher made it also a bit of training in mental self-control by the pupils. This self-control was apparent in the free exercise that followed that controlled by the teacher.

This quality of "occupation" could, doubtless, with profit be more common in kindergarten schools than it is, especially with those pupils who are nearly six years of age and are about to enter the first grade.

That all the kindergarten teachers do not thus differentiate their occupations and activities so that each one leads definitely to the realization of a recognized purpose was evident in several schools.

In one school there was a ball-tossing game. The teacher said its purpose was to train in physical control. Yet the pupils were at no time attempting to be controlled or accurate. It was a fine rollicking, hit and miss, tumble about game, excellent for recreation and fun and for *scattering*, not for focussing energy.

In another school the most mature group was engaged in paper-folding exercise directed by the teacher. Its purpose was, so the teacher said, to train the pupils to follow directions—to concentrate on what she said and to do exactly what she directed. Yet a large proportion of the pupils were inattentive, talking to one another, lagging behind the directions of the teacher, and quite at sea as to what to do by the middle of the exercise. The teacher made no serious attempt to establish in this exercise a different spirit or a different control from that in any exercise that might properly have the play spirit. It was training that would unfit the pupils to meet the demands of the first grade, or even the demands of a well-regulated home.

Evidences were at hand on every side that the Supervisor of Kindergartens and many of the directors are aware of the importance of the problems of organization referred to in the foregoing paragraphs. A letter addressed to the kindergarten teachers by the Supervisor gives in great detail the points toward which teachers should turn attention. The theory of the kindergarten as set forth in this letter goes beyond the actual practices in not a few particulars, but as in the other phases of organization and discussion the system is evidently alive to the need of continual improvement.

IV. RELATION BETWEEN KINDERGARTEN AND FIRST GRADE

There is, in most school systems, a lack of adjustment between the kindergarten and first grade schools. Although this lack of adjustment is no more serious than that between the primary and grades, or that between the eighth grade and the high school, it, nevertheless, calls for serious study and systematic effort to remove it.

As I have previously noted, the Supervisor of Kindergarten Schools is actively at work on this problem and in some schools successful experiments are being tried in training pupils in those habits which will be helpful in the first grade and in

familiarizing the pupils with the simple facts of number and with the use of language that will be helpful when they begin the formal study of number and reading.

But the Supervisors of Primary Schools also realize that the adjustment cannot be made unless the first grade schools put off unnatural formality and restraint, and introduce more of the spirit of free activity which is characteristic of a well-organized kindergarten.

In a recent address before the Missouri State Teachers' Association, one of the Primary Supervisors has outlined the modifications that ought to be made in the first grade practices. They are stated here in condensed form for the sake of brevity.

(a) The number of pupils per teacher in the first grade ought to be reduced.

(b) With fewer children some of the desks near the front of the room might be removed so that a clear floor space may be available for games, dramatizing, and social grouping. Movable chairs and desks are being tried in some schools.

(c) Every first grade room ought to contain a piano.

(d) External changes, however, will not bring about a true union. That can only be effected by a close articulation of work and by kindergarten and primary teachers having a deeper insight into and a higher appreciation of each other's work.

These suggested modifications are not merely theoretical. They are being put to the test.

I visited one first grade room where all these suggestions seemed to be applied. The room was furnished with kindergarten chairs and tables. A rack in one corner of the room held the books and working material and tools of the pupils when they were not in use. There was a piano. The pupils moved tables and chairs to the sides of the room and played games, danced, marched, and gave short dramatic representations. The tables and chairs were then brought out into the

floor. The pupils were set to work at regular first grade tasks. One division came to the front with their chairs and had a reading lesson.

The teacher said that the pupils had covered more than the required amount of work in reading and number. Certainly the reading was exceptionally good.

The teacher was a good kindergarten teacher and a good first grade teacher. The school was an ideal first grade. Here there was no mal-adjustment.

There are eight first grade rooms in the city using movable chairs and tables.

The Supervisors of Primary Schools visit the kindergarten schools and the Supervisor of Kindergarten Schools visits the primary schools.

First grade teachers are invited to the meetings of the kindergarten teachers.

Extension courses are given at the Teachers' College for primary and kindergarten teachers. These courses take up those matters that pertain to both grades of schools.

The kindergarten teachers are now trained at the Teachers' College. This training involves some study of first grade work. The training of grade teachers includes the kindergarten work.

It would appear that, while at present there is a recognized gap between the kindergarten and first grade schools, the gap is closing. I do not know of any other measures that may be taken to close it than those that are being taken. The only recommendation which can be made is an urgent recommendation that the movement now under way may be accelerated.

V. INSTRUCTION IN GRADES I-VII

There are some phases of grade work which cannot be observed during the last month of the school year. Indeed, there are reviews and special exercises at this time to such an extent that the observer must take into account the special

conditions which surround him as he enters the class. The methods of the teachers can, however, be observed and studied, and the spirit and results of the work can be adequately reported.

1. *Two divisions in each room.* It appears to be the general practice in St. Louis to divide each room into two sections for all subjects of study except penmanship, drawing, singing, nature study, ethics, and, in some instances, spelling.

I found few rooms in which this was not the actual practice. The exceptions were, for the most part, in the upper departmental rooms. The exceptions appeared to me to prove beyond a doubt the altogether greater effectiveness of the two division plan in those exercises whose value consists chiefly in the individual oral response of the pupil. If, for instance, an oral reading lesson is to give practice in oral reading, it is evident that no pupil will receive the practice who does not read. The same is true of a lesson in arithmetic designed to give practice in combining numbers or in solving problems. But this necessity of having small classes where the individual is to be reached is so generally understood by principals and teachers that the common practice is here mentioned by way of emphasizing its importance.

2. *The departmental plan of instruction* is well and widely established. A wise policy has been adopted of allowing this plan to make its way on its merits. It is extending as the conviction of principals and teachers favor it and as local conditions warrant. I have found great variety, too, in the application of the plan. In some schools the seventh and eighth grades only are brought under this plan. In others it is extended to the sixth, the fifth, and even the fourth. Departmentalized rooms are grouped into "units," two, three, or four rooms constituting a unit.

The discussions of the departmental plan found in the recent reports of the Superintendent of Schools show that the advantages and dangers of the plan are well understood. An effort is being made to limit the number of different pupils

for which one teacher is responsible and to devise means by which each pupil is looked after and advised.

There is one advantage, however, that I do not find mentioned. Under the departmental plan each teacher becomes to a degree a special teacher. It would appear, therefore, that she needs the assistance of a specialist much less than the teacher of all subjects does. Here is one way, therefore, of saving expense. Let the supervisors of special subjects, of art, music, penmanship, physical exercise, arrange to visit the departmental schools for occasional inspection and advice only, holding regular term grade meetings for the presentation of plans of procedure. If this plan were adopted gradually, it would at least make unnecessary any *increase* in the supervising staff because of increase in number of schools.

3. *Types of recitation.* Two types of recitation were evident. They may be described as follows:

- (a) The Pupil-Subject-Teacher recitation.
- (b) The Teacher-Subject-Pupil recitation.

In the *first type* the pupils were always in the foreground. They were discussing a pertinent question, a phase of the subject-matter of the course of study. The teacher was helping.

There were many illustrations of this type of lesson in all grades and in all subjects. Two or three illustrations will suffice.

GRADE I—ORAL LANGUAGE LESSON

This was a very genuine "conversation." One pupil gave briefly a personal incident. Others questioned him regarding details. The questions and answers were pointed and definite. The teacher was at hand with skillfully given help when it was needed, but the exercise was in the hands of the pupils.

GRADE II—READING LESSON

Pupils were reading from a Nature Reader. They did not wait for the teacher's questions, but volunteered repeatedly observations and questions. Teacher kept the interest by approving the one who asked a good question or contributed a bit of apt personal experience and occasionally asking a question or giving a hint that started trains of thought. Word difficulties were removed by skillful use of blackboard. It was evident that *the pupils* were actually leading in the exercise.

GRADE III—ARITHMETIC LESSON

Problems had been made by the pupils to illustrate a given principle. Problems were exchanged among pupils and performed on the board, but the one who had made a problem was responsible for its correct solution—not the teacher.

GRADE V—ARITHMETIC LESSON

This was a review lesson in explaining problems. Each pupil read a problem, closed his book and repeated it. He then explained in a systematic way how to solve it. If he hesitated he referred to his book or some pupil asked a question or made a suggestion, or he could ask assistance of another pupil. The teacher came to the rescue only when the situation became involved.

GRADE VII—U. S. HISTORY LESSON

A study of the Constitution with open book. Questions were largely by pupils. Discussions were largely by them. Important sentences and ideas were selected and read. Parts for memorizing determined by pupils.

GRADE VIII—UNITED STATES HISTORY LESSON

This was a general review in preparation for an examination. Pupils were raising such questions as they thought might be asked in the examination regarding the answers to which they were uncertain. The questions were excellent and the discussions were lively and almost entirely in the pupils' hands. In case of doubt the textbooks were referred to, and the teacher helped when she thought help was needed.

This type of lesson might be illustrated by many more examples taken from the recitations that I witnessed. The cases cited are sufficient, however, to contrast with the other type in which the pupils are merely followers of the teacher's lead.

It is clear to the onlooker that in the Teacher-Subject-Pupil type of lesson, the pupil begins *to think* when the teacher has asked a question and stops thinking when the question is answered to the satisfaction of the teacher. The teacher is testing to find out if she has succeeded in getting into the pupil's mind the desired amount of knowledge. The pupil is trying to satisfy the teacher.

I observed a considerable number of such recitations, especially in the grammar grades, but there were not many of an extreme kind.

Of course, it is recognized that there are exercises in which the teacher must be first—she must instruct, point out the way, control. But the first type of lesson has a much larger place in school than is generally given it, and my observation was that many St. Louis teachers have discovered the value of the Pupil-Subject-Teacher recitation.

In the *pupil first* lessons that I saw, there was no sign of frivolity or superficiality. The teachers seemed to understand the purpose of such a lesson and were generally skillful in handling it.

4. *Types of lesson assignment.* The sort of study that pupils put into the preparation of a lesson is determined very largely by the lesson assignment. The following, taken from those that I heard, will illustrate this point:

(a) Grade IV.—Geography Assignment.

“We have studied about astronomical zones. Turn to that part of your book that tells about temperature zones. Study about the two kinds of zones so that you can tell me the difference between them.”

(b) Grade III.—Geography Assignment.

“Tomorrow learn all about the plateau region.”

It is evident that the first assignment will lead the pupils to compare the facts given in the book. It is equally evident that the second assignment will lead to superficial reading and the memorizing of a few facts—enough to satisfy the expected demands of the teacher. The second assignment gives little indication of a useful recitation.

I noticed frequently, on the board, the conventional list of geographical topics—Location, Boundaries, Surface, etc. In no case did I happen to hear a recitation based on these topics, and I mention them only to call attention to the fact that they are a survival of the disconnected memoriter kind of geographical study. Only as location, boundaries, etc., of a section, a state, or a country are seen to have some bearing upon the life of the country has it any value. The mere facts, unrelated, come within the category of useless knowledge condemned by the General Committee which drew up the principles on which the revision of the course of study is being worked out.

However, as I have reported farther on, the general quality of geography teaching is, in my opinion, very high. The illustrations of good and poor lesson assignments have been drawn from geography because they clearly exemplify the two types of assignment. Similar differences in lesson assignment in other subjects were observed.

5. *The Teaching of Arithmetic*¹

This will be treated under the following five heads:

- (a) Learning the symbols.
- (b) Calculating with the symbols.
- (c) Interpreting problems.
- (d) Practical uses of numbers.
- (e) The content of the course of study.

(a) LEARNING THE SYMBOLS

The foundation for this is laid more definitely each year in the kindergarten. Much, if not all, of the objective work in number through 10 or 12 may be done there. This will make it easy for most pupils to begin at once with the form and use of number symbols when they enter the first grade.

I was not able to see any of this phase of arithmetic work in the first grade, because of the time of the year; but I understood from talking with teachers that they were beginning to note the greater ability in the use of number on the part of those pupils who came from the kindergarten.

(b) CALCULATING WITH THE SYMBOLS

Training for skill in calculation has not been taken up seriously in many places in this country—so far as the writer knows. In the schools of St. Louis this phase of arithmetic instruction is developed about as far as it is elsewhere.

There are varied and numerous drills on the fundamental facts. There are flashcard and "time" exercises to produce facility in using the fundamental processes. Pupils learn the "aliquot parts" and apply them in special oral exercises. There is a general attention to economical ways of solving problems. But I saw very little, only an occasional, *systematic* effort to develop progressively *skill* in calculation.

¹ The proposed new courses of study will change many, if not all, the practices on which adverse comment is made in the following report.

For example: In the primary grades there were drills for quick recognition of the sums of two and three members. But in the column addition that followed teacher and pupils alike pointed to one figure at a time, thus undoing the work of the flashcard exercises.

St. Louis seems as reluctant as do other places to adopt the "making-change" method of finding the difference between numbers (the Austrian Method). This method is taught in the first grade, and much time would be saved and an increase in accuracy would result from a continuance of its use in all "find-the-difference" examples and problems. This has been strongly urged in a recent report of the Superintendent of Schools.

But the greatest need for a *systematic* plan of training in calculation skill is in the grammar grades. I repeatedly heard a teacher say, "Is that the easiest way to do that?" and an easier way was found. But an occasional or even frequent question of this nature is not *training*. That it is not effective was shown in a seventh grade class. The problem was a simple one in mensuration, that resolved itself into the formula $12'' \times 12'' \times 2' = \text{how many cubic feet}$. All but two or three of the class multiplied $12 \times 12 \times 24$ and divided by 1728. The teacher called attention to the easier way, $1' \times 1' \times 2'$, but the fact that seventh grade pupils were not alert to see the easier way and felt no responsibility to do the easier way showed their lack of previous training. I saw little in the grammar grades that could really be called training in this direction.

(c) INTERPRETING PROBLEMS

The work in interpreting problems in the primary grades was a delight to see. The problems were kept simple in character and numbers; and what was no less important, the teachers had a *definite* plan of procedure which they used with skill. Pupils were, one after the other, *1st* reading the

problem; *2nd* stating what they were to find; *3rd* how they were to find it. The teacher was helping, not by asking a lot of questions, but by insisting that the pupil find his own way by re-reading his problem and re-thinking his process.

If an equally effective plan were carried out through the grades above the primary, there is little question that a larger number of seventh and eighth grade pupils would be skillful in problem interpretation.

Attention was forcefully called to this phase of arithmetic instructions in a recent report of the Superintendent, and I am assured by members of the arithmetic revision committee that it is to receive proper attention in the new course.

(d) PRACTICAL USES OF NUMBER

This most important phase of arithmetic teaching is being well developed in the schools that I visited. I will mention a few typical examples that are very suggestive of what may be done. They also indicate the fine thinking that the teachers and directors are putting into the school work.

Grade I. Covering the top of a table in the front of this room, there was an assortment of toy household furniture of all kinds. This was made out of stiff paper by the pupils. It was made after a study of home furniture, and articles were modelled after their home designs.

The teacher said that the preparation for making this gave large training in language and some opportunities in "civic" lessons. The teacher helped the pupils to start the making of the furniture in the art periods and it was continued as seat (busy) work with occasional individual assistance. The furniture showed much individuality and ingenuity in construction.

The furniture was used in buying and selling exercises, pupils in turn acting as buyers and sellers. The problems were worked out with paper money—made by the pupils—and on the blackboard.

Grade V. This teacher was beginning the study of measurements of triangles, oblongs, etc. The class went to the window where they could see a dwelling-house whose construction exemplified these figures very clearly. The lesson was based on this house.

Grade VIII. Series of lessons based on dinner menus. The problem was "Find the actual cost of material when bought at the store and calculate cost of the menu for 2, 4, 6, etc. people." This is genuine "Community Arithmetic." The menus were written on the board.

These are samples only of the successful efforts that are being made to apply arithmetic to real problems. I was told that in the spring the school garden is used in many schools for arithmetic as well as for drawing lessons.

As yet the industrial handwork is not well developed above the primary grades. As this enters more largely into the life of the school, opportunities will be found in it for a larger application of arithmetic.

(e) THE CONTENT OF THE COURSE OF STUDY

The course of study in arithmetic appears to have been thoroughly modernized. Useless arithmetic has been eliminated, at least I saw none of it; emphasis is placed on the essentials; and as I have pointed out, considerable progress has been made in systematic training in calculation and interpretation of problems, although this is more evident in primary than in grammar grades.

6. *The Teaching of Art*

As another report is to be made on art instruction, I will mention only two or three phases of this subject.

(a) There appeared to be a very free use of pictorial illustration in not only the primary grades, where it is to be expected, but also in the grammar grades.

However, when looking over the grammar grade illustrations, I could not but question whether the lessons in color, proportion, space relations, etc., learned in the art period had been applied in this other work. In some cases it seemed that these lessons had been applied. In others, the coloring of maps and the placing of illustration on the composition page were crude and apparently done without thought of art values.

In making diagrams in arithmetic problems, there seemed to be generally little regard for diagram truthfulness. The dimensions of the diagram had no relation in most cases to the relative lengths given to the problem. That a diagram should have the relative proportions indicated by the mathematical dimensions ought to be made plain, not only in the arithmetic lesson, but in the drawing-to-scale lessons of the art course.

An eighth grade lesson in "art appreciation" showed that the art course was not merely one in drawing and painting. This lesson was based on a report given by a committee of pupils who had visited the Public Library.

7. The Teaching of English

By English is here meant composition and grammar.

At present grammar is given from two to four periods a week in grades IV-VIII. The grammar work is very technical, with large emphasis on diagraming.

However, when the new course of study goes into effect, the work in English will be modernized. The new plans provide for systematic training in *the use of English*, oral and written. Grammar will be taught only as it explains good usage, and will not be emphasized except in the seventh and eighth grades.

In a few schools the development of oral and written composition along the new lines is already making progress. It

is more evident in the primary than in the grammar grades. A few examples are here given.

Grade II. Pupils were putting related words into a story—blacksmith, apron, horse, etc. An oral lesson had preceded in which the blacksmith, his shop and work had been discussed.

Grade IV. Oral language lesson. Subject, "A Fire" leading to "Safety First" application.

In the general discussion emphasis was laid on *descriptive* words.

After a general survey of fires had been made, point of view for a description was selected.

Composition was built up by sentences contributed by pupils. They selected the sentence, among those proposed, that continued the story logically. Each sentence was modified by pupils' suggesting different order of words or substitution of more fitting words.

Grade IV. Correcting a composition. Unpunctuated paragraph on the board. Pupils suggested *first* sentence punctuation, *second* use of commas and quotation marks.

This was followed by correction of their own paragraphs, written previously, a day or two ago. Here was a beginning of valuable training in self-criticism.

Grade VIII. Answering advertisements.

The letters were read and criticised by the class. The letters were not in answer to a general, vague advertisement, but to a specific, practical one. It was a definite thought and expression problem.

It was evident from the pupils' comments that the desirable qualities of such a letter had been well discussed before they were written. The comments were serious and pointed.

While exchanging the familiar work in grammar for the less familiar work in constructive composition, many teachers will, for a time, be at a loss for a method of procedure.

The change may well be made slowly. The new course of study ought to be very definite in regard to aims, methods and standards of work in each grade.

8. *The Teaching of Ethics*

Little can be said on this subject that teachers, principals, and superintendents have not said. The present course is a course in *moral instruction* that is generally recognized to be ineffective. At present little of it is in evidence.

The new course is based on *conduct* and will aim to influence, not only the life of the individual, but also that of the school. The new course is admirable in its purpose and method, and in harmony with generally accepted principles.

9. *The Teaching of Geography*

Of the considerable number of geography lessons that I saw, few were of a sort that could not be rated excellent. In fact, this subject seemed to me to be more generally well taught than perhaps any other subject in the grammar grades. The following qualities were prominent in most of the lessons:

- (a) The lessons were discussions rather than recitations.
- (b) Study lessons with teacher in which the textbook was open and used throughout the period were frequent.
- (c) There was an abundance of wall maps, and they were freely and skillfully used.
- (d) The pictures were studied as systematically as the text.
- (e) The blackboard was used freely by pupils and teacher.
- (f) Bulletin boards with pictures and clippings from newspapers and magazines were common.
- (g) Map drawing was much in evidence, together with production maps.
- (h) Real objects of geographical interest were numerous.

(i) Sand-tables were in use and there were many examples of miniature reproduction of houses, utensils, etc., of foreign lands.

(j) Dramatization is a common method of reproducing unfamiliar situations.

(k) The material furnished by the Educational Museum was much in evidence—type pictures of geographical regions, raw materials, specimens of birds, fur animals, minerals, woods, stereoscopic views, etc.

Examples of geography lessons have been described in another part of this report. While some teachers have not yet learned how to throw the lessons into the hands of the pupils, but do most of the talking and thinking themselves, they are less numerous than might be expected and are, so far as I could learn, diminishing in number.

Geography as a special subject of study stops at the close of the seventh year—properly, it seems to me.

10. *The Teaching of History*

At present the study of history is made through supplementary reading up to the seventh grade. In my judgment that is the proper way to study it during those years, on condition that the supplementary reading *systematically* provides for it.

In the seventh and eighth years U. S. History is studied from a textbook. As in the case of geography, this work is particularly well done. There is a minimum amount of "reciting" the book and of answering the teacher's questions. The largest number of lessons that I saw consisted of discussions in which there were definite subjects that the pupils were developing. In many cases the text-books were open and freely used during the period. Yet essential facts were not neglected, as was evident from an occasional "fact" lesson and from occasional questioning by myself.

While I saw little dramatization, I did see signs of it and

I learned that it is frequently used and in many, if not all schools, informal dramatization not seldom is carried over into a more formal pageant, produced for the whole school or for parents and friends.

11. *The Teaching of Reading*

In observing the work in reading I have had in mind the following questions:

(a) Is there a definite purpose in this exercise?

(b) Is the method of procedure suitable for realizing the purpose?

(c) Are there evidences that the purpose is actually being realized? This question relates to the skill of the teacher.

In the primary grades. The teachers' work in these grades is principally to teach the reading symbols; to relate them to real things and to thoughts; to familiarize pupils with these symbols so that by the end of the fourth grade they may read orally and silently with facility and understanding whatever may be found in print in simple language about the experiences with which they are acquainted; to induct pupils into a method of studying a story.

I found that all these things were being well done in the primary schools.

The first grade teachers appeared to be particularly skillful in holding the attention and interest of pupils. In the lessons from the board there was maintained an admirable attitude of expectancy on the part of pupils. Their attention was held by the uncertainty of and interest in "what was coming next." In the use of words I saw little haphazard work. Teachers seemed to know the words upon which the pupils needed drill, and emphasis was laid on these. There was a skillful use of phonics, phonograms, flashcards, etc. The seat work in reading is particularly well planned and provided for. To train in phrasing, "flash phrase cards" were used very effectively.

In the other primary grades the same knowledge of what was to be done and how it ought to be done, and a similar skill in conducting the various reading exercises, was evident.

For instance, in a review lesson, each pupil read a considerable section, enough to give him practice and show his ability. In a new lesson, the teacher had found the probable difficulties and these were discussed before the reading. In a study lesson, the teacher so directed the exercise, not always in the same way, that pupils were learning how to think as they read. When a lesson was for the purpose of enjoyment, pupils came in turn to the front of the room, and read something that was within their comprehension and power to read well, or the teacher read to the class. In one or two instances the selections were not well selected for this purpose and the reading was halting; but this was seldom.

The review reading exercises in most primary grades, in which I happened to be present, showed that the primary reading is on a high plane of efficiency.

In the grammar grades. Reading in these grades in the St. Louis schools is not much, if any, better, and probably no poorer, than it is generally in the schools with which I am acquainted. To be specific, the larger number of reading lessons that I saw in the fifth, sixth and seventh grades, and in a considerable number of the fourth grade, were routine and uniform in character. One pupil after another rose and read a fragment. This fragment seldom had a relation to the thought units of the whole selection. At times the reader reproduced the thought that was supposed to have been read. This was largely memory reproduction. At other times, the entire selection was reproduced, but again, there was seldom an effort to get the point of the selection and to relate the story from that point. It was a retelling in the way the printed page had told it. There was, however, a commendable divergence from the wording of the printed page.

This same type of lesson was used whether the lesson was for practice in learning how to read orally, how to read a difficult selection in which much study of words was required, or how to read for enjoyment.

Seldom did the pupils read to the class. They read to the teacher.

There was an occasional silent reading lesson, more common in fourth grades than above, in which the pupils seemed to be reading with a *purpose*.

There was an occasional teacher-class study reading lesson, again more common in the fourth grade than in grades above, in which the teacher appeared to have herself read the selection beforehand, to have digested its thought and sensed its spirit, and to know how to help her pupils to read for the thought and feeling values.

To illustrate a lesson given by such a teacher, the following will suffice. It was in an eighth grade room. The reading was from *The Tales of Shakespeare*. The lesson was sight-reading, and the teacher forestalled difficulties by a short discussion of words, using the blackboard. The teacher's purpose was to have the pupils *individualize the characters* and *appreciate the humor* in the remarks made by the characters and in the situation. This class was apparently not particularly literary. But the teacher, by hints, by occasional effective reading, or re-reading of passages, realized to a good degree the purpose she had in mind. The lesson, never for an instant, became a drill or a study lesson.

This may be contrasted with another lesson, having the same purpose, i. e., literary appreciation, in which the teacher labored with one boy in the front seat for a considerable time over the proper reading of one sentence. The rest of the class, consisting of the entire room, could hear little of what was going on between the one boy and the teacher. No literary appreciation could result from such a method.

It is evident that there are teachers who have thought out

and are applying skillfully different kinds of methods to reach different reading ends. But I could not find that this problem had been worked out for all schools, or even that the problem was generally recognized, as it seemed to be in the primary grades.

There is need of an analysis of reading in the grammar grades, to determine the relative values of oral and silent reading and to determine the relative place of each in the program. There will then be needed methods applicable to each kind of reading—methods for developing vocabulary, for systematic study of the thought of the text so that pupils will learn how to find the most important thoughts and relate the subordinate ones to these; in short, how to study a reading lesson. If there is to be training in enunciation, emphasis, inflection, voice quality—the elocution factors of oral reading, it should have its well-defined place and its specific method, and not be mixed up with other purposes and methods.

But again, I wish to repeat that St. Louis teachers are not alone in facing a serious reading problem in the grammar grades. They share this problem with most of the other teachers of the country.

12. *The Teaching of Penmanship*

Scarcely too much can be said in praise of the teaching of penmanship in the St. Louis schools.

I have gone over carefully the course of study as laid down in a number of the Public School Messenger. There different elements and phases of the subject are treated in great detail with numerous illustrations. The difficulties peculiar to each phase of the subject and to each grade are also treated in detail, and methods are described and illustrated to help the teacher meet them.

I did not find one teacher who did not appear to know "what to do" and "how to do it" in penmanship. Further-

more, I saw no lesson in this subject that was not being conducted skillfully.

As a special report is being prepared on penmanship, I will not describe the way in which it is taught farther than to say that the first grade, free hand work at the board seemed to be marvellously well adapted to the pupils' capacities. The results were exceptionally fine and secured without strain.

The progression through the grades was well worked out, and the skill gained in the practice exercises was well, although not perfectly carried over into regular work.

There is apparently some feeling among teachers that the directions for teaching have been too precise and detailed and that penmanship has been over-emphasized as to time and effort. It is possible that supervision might be distributed more according to the need of the teachers, thus relieving the competent teacher of some strain. It is possible that in the upper grades those pupils who have become habitually good penmen might be excused from the regular penmanship exercises. But it would seem that changes should be made with great caution in methods of procedure that have proved so effective in securing desirable results, as those in penmanship have.

13. *The Teaching of Spelling*

Here, as in reading, the difference in the efficiency of the primary and grammar grades is conspicuous.

In the primary grades spelling was confined to the common words found in the reading lessons and to a carefully selected list of words assigned to each half year. The teachers were studying these words with their pupils, and they were teaching them how to study words. A variety of drill methods were used, all of which appeared to realize their purpose.

Attention may, however, be called to the fact that in several instances teachers were not having pupils discriminate

between the words they knew and those they did not know. With equal emphasis drill was given to both kinds. Spelling offers excellent opportunity for the development in judgment, and training to this end may begin very early.

In the grammar grades I saw practically nothing of what may be called modern teaching of spelling. Lists of words in the spelling book were being drilled on and reviewed in room after room, without regard to the spelling needs of the pupils. I saw practically no signs of a study of words in any form.

It is only fair to say that this kind of spelling work was not defended by teachers, principals, or superintendents. It is to be changed when the new courses of study go into effect, but it illustrates the great need there is for change.

14. The Teaching of Nature Study

Besides the few lessons that I happened upon, there were numerous signs of excellent work in nature study.

In the schoolrooms of the lower grades were window boxes, pots, and glass receptacles in which seeds had been planted and where growth of plants and roots could be seen. Boxes in which cocoons were maturing were in evidence.

Every room is provided with decorative plants from the greenhouses conducted by the School Board. I visited one of these and learned that not only were ferns and other plants carried to the schoolrooms, and taken away and cared for during the summer, but soil, seed, and window boxes were supplied on request for nature study.

The school gardens are a conspicuous feature on the school grounds, or on vacant lots in the neighborhood. They were well kept, and I found children working in them on several occasions.

The teachers reported that many pupils had started home gardens under the inspiration of the school garden. I questioned those I found working in the school gardens, and

found almost invariably that they had a garden at home in which they were much interested.

One nature-study lesson I happened upon in the fifth grade. It was on water birds. The teacher had a colored chart illustrating several kinds of such birds. The pictures were studied for peculiarities of color, bill, legs. Pupils talked freely of their observations of water birds and their habits and criticised or questioned each other's statements freely, but in excellent spirit. The teacher showed sufficient knowledge of her subject and led the pupils to point out places in the parks and along the river where birds of this kind could be found. The lesson was closed by the teacher's reading of "The Sand-piper and I." Throughout the lesson good language was emphasized, the pupils insisting on it as much as the teacher. From time to time a sentence was put on the board, so that by the close of the lesson there was a sentence outline for a written review.

The teacher said that the Museum specimens—stuffed birds—would have been used, if it had not been so near the close of the year.

This lesson illustrates the excellent quality of nature study carried on in the schools.

15. *The Use of the Blackboard*

The teachers of the St. Louis schools have apparently, without exception in the case of those whose rooms I visited, learned how to use the blackboard skillfully in instruction. What is equally important, they have taught the pupils to use it. Both teacher and pupils resorted to the blackboard naturally to supplement verbal expression with the crayon.

Very seldom did I see any slovenly work on the board. I could not but feel that this exceptionally efficient use of the crayon was partly traceable to the methods used in teaching penmanship, for the teachers must themselves learn to write well, and much emphasis is placed on the use of the crayon

in free exercises, particularly in the primary grades, but also in grammar grades. Moreover, in penmanship, the form and the proper making of figures is taught no less thoroughly than the form and the making of letters, and good arrangement of work is also systematically taught.

In a considerable number of rooms the writing on the board was so dim that it was very difficult to read it. One teacher explained that it was written lightly so that the teacher could use the flowing style of writing that the pupils were taught. But there was doubtless a misapprehension of the wish of the Supervisor of Penmanship by these teachers, for in other rooms the writing was very legible. It is important that the blackboard writing be distinct.

16. *The Educational Museum*

Inasmuch as a full description of this institution and of its methods of work are available in a pamphlet prepared for the United States Bureau of Education, entitled, "The Educational Museum of the St. Louis Public Schools," I will make only brief mention of it.

I found its valuable material in many rooms and in all grades. This material was vitalizing the work in many diverse fields—nature study, geography, history, literature, science. Its influence is far reaching and evident. An entire report could be written upon the Museum and its work.

I spent one-half day in the Museum and was impressed with the uniqueness of its plan and purpose, with its efficiency of administration, and its outlook for future larger usefulness. Its value depends largely on the fact that it was conceived as an integral part of the school system to "Carry the world to the school;" that it is under the control and management of the Instruction Department so that its development has been a response to the needs of the schools.

VI. THE PRINCIPAL NEEDS CLERICAL ASSISTANCE

The preceding part of this report has foreshadowed the conclusion that, good as the grammar schools of St. Louis are, and even superior in many fundamental particulars, yet in comparison with the primary grades, they are relatively inferior in educational efficiency.

This difference in efficiency is not peculiar to St. Louis; it exists in all the school systems with which I am acquainted. It is not a difference in spirit or in the ability of the teachers. It is because the teaching problems have not been as well analyzed and solved in the one case as in the other. The purposes of instruction in the grammar grades are yet too general and vague, and the methods of instruction are, as a consequence, often misfits. I have pointed this out in the discussions on "Types of Recitation," "Lesson Assignment," "The Teaching of Arithmetic," "English," "Reading," and "Spelling."

So far as I can judge from my conference with principals and assistant superintendents, they are aware of the needs of the grammar grades. In fact, as I pointed out at the beginning of this report, a thorough-going study has been given the subject for two years.

But when the new courses of study have been formulated, there will still be the need of working them out in each schoolroom. This task, in the grammar grades, is even more difficult than that in the primary grades, for the subject matter is more complex, and the methods of instruction are, for that reason, more varied, and they require more elaboration.

The responsibility for the successful working out of proper methods of instruction in each schoolroom rests, and must rest, on the teacher and principal of the school. To be sure, there are supervisors of special subjects, and there is a competent body of assistant superintendents, whose prime interest is in devising and extending good methods of instruc-

tion. The importance of their work is recognized. But the principal must be the instruction expert for his building, as well as its chief administrative officer.

As it stands today, in St. Louis and elsewhere, the rapidly increasing number of administrative duties has taken much of the time that ought to be given to supervision of instruction, i. e., to helping the grammar school teachers, in particular, to understand their modern problem and to apply in their work the modern methods best adapted to their pupils and to each particular task.

So far as I met the principals and am able to judge, they are students of education and thoroughly competent to do this work. But they need clerical assistance in the administrative field. Records, reports, and many routine details may be taken over by a clerk, relieving, not only principals but teachers of work that is more or less mechanical. I recommend strongly that this be urged upon the attention of the Board of Education.

VII. MISCELLANEOUS

There are several matters that are closely related to instruction that are difficult to classify. I report my observations relating to these under the following headings:

1. *Quality of Teachers*

The schools of St. Louis are rarely fortunate in their teachers. With such it is impossible to have poor schools. With scarcely an exception, the teachers whom I met have an attractive personality. They are cultivated, strong, and well trained. They are also, as I met them, mentally alert and professionally openminded. They are students of education, and many of them are leaders. It speaks well for the community, that those who have been intrusted with the administration of the schools have not been hampered in their selection of the teachers.

2. *Spirit of the Schools*

The fine spirit that is everywhere evident in the schools is a natural sequence of the quality and spirit of the superintendents, principals and teachers. There is a happy atmosphere everywhere. In not more than two or three rooms did I sense a spirit of discord. The pupils came and went with freedom, but with no tendency to license. Every school-room was made cheerful and attractive with plants, pictures, and the work of pupils.

The pupils were uniformly well-mannered and courteous.

There is one matter to which I would like to call attention, that is perhaps somewhat remote from the "spirit of the schools" but yet is related to it. I refer to the posture of pupils when they stand to address the school. On the whole, it is conspicuously good, particularly in the primary grades. In the upper grades, more noticeable the higher the grade, the boys were inclined to lounge, and to ignore the fact that their only excuse for speaking is that they may be heard by their classmates. This is, of course, unintentional bad manners. It is about the only flaw I observed in an almost ideal school situation.

3. *Apprentice Teachers*

It was interesting to note the fine quality and excellent promise of these prospective teachers, and of those who had recently received their appointment. They gave evidence of the superior education and training given at the Harris Teachers College. I found the influence of the College everywhere I went. St. Louis is an example of a place in which the normal school occupies its proper place of educational leadership.

The supervision of the apprentice teachers is also to be highly commended. This is in charge of the Supervisors of Primary Schools. I found one of the primary supervisors in a seventh grade room helping an apprentice substitute give a

lesson in geography. It was a model lesson, not only putting the pupils to work in enthusiastic search for material to use in discussion, but full of pedagogic suggestion to the young teacher.

This plan of extending the fine personal professional influence of the primary department through the other grades, reacts favorably also on that department.

4. *Promotions*

I did not go into the matter of promotions except in a casual way. But it is evident that there is no well defined policy in the city. Promotions are determined by the judgment of teachers largely, with the principal's judgment used as a check.

The only school in which I found a systematic plan of rating pupils, involving abilities as well as scholastic attainments, was the school in which the principal said there was less than 5 per cent of retardation. Another neighboring school with somewhat more favorable conditions had a retardation of about 12 per cent. This latter school had quarterly home reports, but personal judgments of teachers determined promotions.

I do not mention these cases to approve or condemn the retardation percentage. I did not study the situations sufficiently to pass judgment on them. I mention them to call attention to the fact that it is desirable to have a uniform system of rating pupils that shall prevail throughout the entire body of schools. This system, or rating scheme, should be devised by the superintendents, principals, and teachers working together. It should give recognition to all the fundamental factors that make for successful living out of school. It should then be the basis for judgments relating to the grading and promotion of pupils all over the city. It would be an approach to a scientific rating, displacing the present exclusively personal judgment rating.

5. *Civic Relations*

The new course of study in civics that is soon to replace the course in ethics will give much greater breadth to the relations of the school and the community, and will materially vitalize them. But even now some attention to these relations is apparent.

The concert given in the park one Sunday afternoon by a chorus of 1500 high school pupils is a valuable contribution of the schools to civic culture and enjoyment.

The grammar school pupils from time to time give historic or literary dramatizations and pageants in the grammar school halls or on the school grounds. To these parents and friends are invited.

The annual school picnics held by the pupils and teachers of each building, in which the parents and friends join, are important bonds between the schools and the community.

The beautiful school buildings and their artistic grounds are a constant lesson and a strong bond creating, unconsciously, a common pride in the school in the minds of pupils and adult citizens.

The parks are used very generally, I judge, by the pupils who attend school near them. The pupils go to them in school time by schools, and at other times, individually, or in groups, to study nature and to give informal out-of-door dramatizations.

I have mentioned the growing use of the community problems as material for arithmetic and composition. But besides that there is a primary school course in St. Louis history and geography, sample lessons of which I saw. Excursions are occasionally taken by older pupils to manufactories and other places of industrial interest.

Thus, increasing attention to civic relations is present. It only remains to systematize and make more effective in the lives of the individual pupils and more fully in the life of each school the civic idea as it relates to education. For this,

as I have said, plans are already well conceived and partially formulated.

RECOMMENDATIONS

1. That the new course of study be completed and adopted as soon as possible.

2. That the closer articulation of the kindergarten with the first grade be promoted by every possible means.

3. That the departmental plan of instruction be extended as far as may be found feasible in particular buildings.

4. That supervision emphasizes those methods of instruction now commonly exhibited in which the intellectual initiative of children is cultivated.

5. That special emphasis be laid on supervision of the grammar grades where instruction is less well organized than in the primary grades.

6. That the principals be relieved of some of their present clerical duties by being given clerks.

7. That the policy with regard to the promotion of pupils be standardized.

8. That further emphasis be laid on training in the understanding and appreciation of civic responsibilities and relations.

CHAPTER XI

THE CURRICULUM SITUATION

BY J. F. BOBBITT

*Summary*¹

This chapter deals in a descriptive way with the changes in the course of study which are now under discussion in the St. Louis schools. It takes up the details of these discussions in a number of lines and expresses approval of the tendencies exhibited in the reports of the various committees.

There is urgent need that the work of revision be carried forward as fast as possible. At present the course of study must be described as very conservative.

The chapter makes no general recommendations except those which are implied in the last paragraph. Detailed recommendations on particular subjects are included with the descriptive paragraphs.

¹ By Chas. H. Judd.

THE CURRICULUM SITUATION

Some three years ago a general committee and about a score of subcommittees were appointed and assigned the task of drawing up new courses of study for the St. Louis schools. An excellent plan of attack upon the problems presented by each of the various subjects was drawn up. Each subcommittee in charge of the course of study in a single subject was expected first to define the aims or purposes to be realized in the teaching of the subject; second, they were expected to discover and indicate the methods that appeared to be best by way of realizing the purposes; third, they were expected to indicate the general nature of the curriculum materials that should be employed; and finally, they were expected to draw up the details of a course of study, showing the things to be covered in each of the grades.

This plan goes to the very root of the various problems. The committees were expected to build from the ground up. Naturally they were expected to secure suggestions from experience within the city and from other cities as fully as possible, but after obtaining such suggestions, it seems that they were expected to look at the realities themselves and to make judgment as to the things needed without regard to whether they should recommend continuance of what has been done in the city, or what is common in cities in general. Clearly, the task is one that is not to be accomplished hurriedly. All the subjects present complicated problems. Suggestions made are endlessly diversified. Sound criteria of judgment are difficult to define and difficult to apply after they have been defined. Tradition, use and wont, and the general machinery of the schools with which people are constantly in contact present various kinds of obstacles to clear unbiased judgment. Things tentatively determined upon by

a committee need often to be tried out in different schools under different conditions, to see whether the tentative judgment of the committee is confirmed by actual experience. It is not surprising, therefore, that the reports submitted are still in tentative form; and that some of the reports have not yet been even tentatively formulated.

The appointment of these committees on courses of study seems to indicate that the old courses are no longer satisfactory, and that they need something more than merely amendment. It appears to indicate the need of fundamental reformulations based upon first principles. As a matter of fact, in an age of unusually rapid transitional changes, nothing less than such fundamental labors will serve the needs of the city. The presence of these committees performing this type of work indicates the prior presence of rare educational insight in those responsible for direction and leadership within the school system.

The situation resulting presents an almost insuperable obstacle to the survey specialist who attempts to discuss the curriculum situation. He is not permitted to judge of the courses of study on the basis of the old ones published a good many years ago. These are being superseded by the new courses. And the latter are not yet in sufficiently completed form for secure judgment as to their probable worth when they are completed.

In this report on the courses of study, therefore, we have considered the newer courses of the various committees. These indicate the best judgments of the school system as to what ought to be done, and as to what will be done just as soon as the courses can be put into operation. As a matter of fact, very much, certainly the major portion, of the things recommended in the new report are already in full operation in certain of the schools of St. Louis. Often, however, the things recommended are to be found only in the more progressive buildings, the work of the committee being in this

case largely for the purpose of making general throughout the city what is already to be found in certain portions of the city.

We are not here discussing all of the subjects. Most of the so-called special subjects are treated by specialists in other portions of the report. Further, in the case of certain subjects like arithmetic, history, and civics, the subcommittees have not yet presented tentative courses. Even in the case of those that have been presented, many are incomplete, and have to be discussed on the basis of an incomplete statement.

A consideration of the actual work going on in the elementary schools is presented in another section of this report. The nature of the work in subjects not yet formulated by the subcommittee is indicated in that report.

NATURE STUDY, ELEMENTARY SCIENCE

Nature study is accorded one period per week, usually of twenty-five or thirty minutes, in each of the grades of the elementary school. The printed course of study which has been in use for a number of years presents a rather elaborate series of topics to be treated. The course has been merely suggested, however, and it has not been expected that teachers should cover more than a limited number of the topics in the list. Along with very many of the topics, reference readings for the teacher are suggested.

In the fullness of outlines suggested, in the flexibility of the course, and in the giving of references, one finds features that should be continued. The course was drawn up, however, a good many years ago, and is now being superseded by the new course.

The committee engaged in drawing up the new course has very wisely begun with statements of the results that are to be secured from the work. They enumerate such matters as:

1. Habits of observing the natural phenomena of one's environment and of reflecting on these through the solving of simple problems.

2. An abiding interest in nature.

3. An appreciation of certain economic values of plant and animal life.

4. Training of the senses and of the powers of observation.

5. An understanding of the meaning of many words.

6. Appreciation of the beauties of nature. This is dwelt upon at much greater length and more frequently referred to than any of the other purposes.

7. Promotion of city beautification.

8. The values that accrue from the outdoor life which the nature study work induces.

There is no definite statement of the need of an appreciative understanding of many aspects of applied science, as these are to be found in the life and labors of an age of applied science. Nothing is said of studies of the science that enters into inventions and labor-saving machinery, household appliances, etc., by which the children are surrounded on every hand. Nothing is said of the need of entering into studies of the application of science to simple labor processes with which the children are supposed to acquire some degree of familiarity in their studies of geography, domestic science, etc.

The committee presents a suggestive outline of work for the grades, four to eight, and suggests that a combined outline for geography and nature study take care of the work of the third grade. No outline is given for the kindergarten and the grades one and two, although it is recommended that nature study have a place upon the program in these grades. The outline for the last five years of the elementary school presents only twelve topics of a very general nature. It is set forth in less than one-half a page of ordinary typewritten matter.

In laying out this merest general outline of a course presumably the committee is intending to provide for flexibility and the opportunity for the adjustment of the work to the needs of particular buildings. Reference is made, however, in the report and also in the latest printed report of the city superintendent to the ineffectiveness of very much of the nature study work in the city schools, due largely to a lack of understanding on the part of teachers as to what to do and the steps to be taken in doing the work, the materials to be employed, the reading to be covered, etc., etc. It is just because of this lack of understanding on the part of teachers that the course should be rich in detailed suggestions. It should present outlines of things that are to be studied; things at home, at the school, on the street, in the park, and in other places to which the children of the school have access; the simple laboratory experimentation that may very well be included; the reading that should be covered in connection with very many of the topics by way of giving width of understanding in connection with the detailed observation; the museum materials that are to be employed by way of giving definite ideas as to details, etc., etc.

Such a wealth of detailed suggestion need in no wise limit the freedom of the teachers to choose the things best adapted for work in particular buildings. On the other hand, however, it enormously economizes the labor of the teacher which otherwise must be expended in studies of the possibilities of the whole situation by way of determining, what to do, what materials to be used, what readings to employ, etc., etc. The freedom of the teacher to adapt the work to a particular building is greatly limited when such wasteful and needless labor must be performed. Since the teacher has not the time and is not usually trained for research work of this type, the program thus drawn up by the scattered individuals is likely very often to be very inadequate for the purpose. It is unfair to teachers not to lay out as great a wealth of suggestions as practicable.

In many of the new courses relating to the work of subjects with which the teachers are more familiar, like the geography, the grammar, the composition, etc., elaborate suggestive outlines are drawn up for the teachers. If these are needed in the studies best understood by teachers, they are much more needed in those studies in which teachers are least well informed.

The city can scarcely expect to have good work on the basis of the tentative course recently presented. It must be first elaborated.

Further, the course is apparently based upon an incomplete theory. Knowledge and appreciation of nature are to grow out of observation and discussion which has no objective purpose. Its only purpose is the subjective one of knowledge and appreciation of nature. Recent educational practice, however, indicates the great desirability of introducing activities having objective reference as a portion of a program for developing a solid understanding and appreciation of the objects and influences of the natural world. The school garden, and more particularly the home garden, need to be utilized for giving substantiality to the work. Taking care of the landscape gardening at the school building and at home offers a further opportunity. Then there are such matters as city beautification, protection of trees and shrubs from noxious insects, and from deleterious climatic influences, etc., which offer further opportunities for labors having objective reference.

It is clear also that the committee does not sufficiently value reading for the purposes which they have specified. They would have direct observation of the objects and phenomena the chief or almost sole basis for the work. Naturally, they cannot overemphasize this necessity of contact with actuality. Without these indispensable contacts there can be no substantiality in the work. It must be remembered, however, that whether the topic be the life history of

a particular bird, insects that prey upon trees, household pests, the application of electricity to labor-saving machinery, etc., it is usually possible for pupils to secure only fragmentary glimpses of the thing in question. This gives them a proper sense of the realities, but they need reading then by way of showing the topics in a large unified way. As a matter of fact, the language avenue is a highly important method of learning the nature of the world's realities after actual contact has given the necessary alphabet of understanding.

READING

The writer examined into the reading that is actually covered by the different grades in a number of schools. In these schools this aspect of the training was taken care of in a superior manner. The children during the year had had for the work in addition to the textbook, many sets of supplementary reading books covering a variety of fields; literature, folklore, mythology, history, geography, science, invention, travel, biography, etc. In addition to these books furnished in sets sufficiently large for the various members of a class, there were found also the city library depository sets of forty or fifty volumes each, selected with special reference to the needs of the different classrooms in which they were placed.

The children had had an opportunity to read voluminously, and in these schools most of them had done so. This had meant rapid reading. It had been largely silent reading. It had been done for the sake of the thought, the emotional reaction, the vicarious experience. It had been for expansion of the mental horizon, for the enrichment of mental content, and for widening and deepening the children's appreciations.

Where observed, the work was of a very healthy character. It was being done for proper purposes, and teachers were using the common-sense methods demanded by those pur-

poses. The teachers had been able to obtain a good supply of the necessary reading materials. As compared with cities in general, it seems that St. Louis schools have been in the past rather generously supplied with the necessary reading materials. They have come chiefly from the public library, and have not been mainly supplied by the Board of Education.

It does appear, however, that with the expansion of the school population, but without any corresponding expansion in the number of sets of supplementary books, there is an increasing inadequacy in the supply of necessary reading materials adapted for class use. The growth of the public library in other directions seems to be demanding funds which formerly went to the support of the supplementary reading for the schools. As a result, the retirement of worn-out copies is exceeding replacement, and the supplementary library is growing smaller at a time when the need, both relative and absolute, is growing greater.

Teachers frequently mention the difficulties that they meet with in their attempts to secure the particular supplementary sets that they desire for their work. The public library has about 850 sets of supplementary books for the various grades of the elementary schools; but there are more than 2,000 elementary school classes in the city. If there were a perfect method of distribution so that every set would always be in use and there would be no waste of time in transferring sets from building to building, there would be enough sets for only about 40 per cent of the classes at one time. Classes would have to be without supplementary books 60 per cent of the time. As a matter of fact there can be no such perfection in the handling of the sets, so that the 850 sets cannot really take care of even the 40 per cent of the classes at one time. There certainly ought to be as many sets of supplementary reading materials as there are classes in the school system. It would appear that each class in the

system ought to have at least one supplementary set available at any time. But since reading experience should be of a varied character, in certain of the grades at least, one can say with assurance that there should be available at any one time supplementary reading materials for different subjects: literature, history, geography, and science. This would mean supply of supplementary reading books equivalent certainly to not less than two sets per class, or about five times as many sets as now possessed and circulated by the city library. This would require an investment of something near 40 cents per pupil. This is not excessive. It would be impossible for anyone to point out any other 40 cents per pupil that offers promise of even half so large returns.

The number of supplementary reading sets circulated by the city library, distributed by grades, are as follows:

First Grade	73	sets
Second Grade	111	"
Third Grade	141	"
Fourth Grade	208	"
Fifth Grade	92	"
Sixth Grade	92	"
Seventh Grade	84	"
Eighth Grade	67	"

The fourth grade classes are not over-supplied with reading opportunity; they are under-supplied, in fact. But taking the fourth grade as standard of what should be supplied, the great dearth of reading opportunity in the fifth, sixth, seventh, and eighth grades is clearly evident. It can be said with absolute confidence that the amount of reading materials covered by the later grades of the elementary school should be larger in amount than that covered by the fourth grade. Yet the figures show that the opportunity is a diminishing one. There are less than one-third as many eighth grade sets as fourth grade. It is true, the number of classes also is somewhat fewer, but in no such proportion;

and the need for fullness and variety of reading opportunity in the eighth grade is very much greater.

The majority of these sets are classified as fiction. The dearth of reading opportunity relating to fields of serious study like history, geography, biography, travel, invention, industries, science, etc., is well shown in the following table:

Fourth Grade	43 sets
Fifth Grade	11 "
Sixth Grade	11 "
Seventh Grade	44 "
Eighth Grade	27 "

The number of sets in these grades needs to be multiplied many times before the serious reading experiences of the pupils can be adequate for meeting current demands upon public education.

It should be noted that some of the sets of supplementary reading which should be read by practically all children are available in only a very meager degree—probably because they are books that have been in large demand, have therefore worn out first, and have not been replaced. Here are a few of them.

Fifty Famous Stories	2 sets
Robinson Crusoe (third grade)	2 "
Robinson Crusoe (sixth grade)	2 "
Story of Ulysses	4 "
Lamb's Tales from Shakespeare	1 "
Courtship of Miles Standish	2 "
Evangeline	2 "
Hiawatha	2 "
Spyri's Heidi	5 "
Last of the Mohicans	1 "
Irving's Sketch Book	1 "
Kipling's Jungle Book	3 "
Parkman's Oregon Trail	1 "
Scott's Ivanhoe	0 "
Scott's Quentin Durward	1 "
The Boys' Parkman	1 "

The type of reading done in certain of the schools of St. Louis is the type that is recommended by the subcommittee

on the course of study in reading. What they recommend doing is really the extension to all buildings of types of work now going on in certain of them. The plans observed, to which we have above referred with commendation, are the ones recommended by the subcommittee. Referring to the reading of the later grades of the elementary school, for example, they say:

“Every sort of literature is proper to these years—epic stories of adventure and romance, ancient and modern, the great mythic cycles, lyric poetry, drama, Bible selections, general prose literature, including biography, history, romantic fiction, appreciations of nature, animal tales, stories of industrial development and industrial heroes—everything of significant import.

“There should be very much material in the course for extensive reading, covering a great variety of interests, printed for rapid perusal and fairly easy grasp of ideas, whose spirit or story or information may be caught as a whole and appreciated and critically scrutinized as a whole. . . .”

The report of the subcommittee on reading is a singularly sane and well-balanced statement of the aims or purposes that should control in the reading experiences, and of the methods and materials that should be used for the work. Their recommendations, however, cannot be adequately followed in all of the buildings of the city unless there is more adequate provision made in the way of the necessary materials to be read.

The tentative course in reading recently submitted by the subcommittee is clearly unfinished. It describes the materials briefly that should be used in the schools, but does not submit suggestive lists for use in the different grades in connection with the different fields of thought and emotional experience. They have pointed clearly to the ends to be reached, but have not pointed out good suggestive series of materials to be used in the reaching of those ends.

Naturally, the readings to be covered in one building will be different from those that should be covered in another

building where the school population is of a different social character. It is clearly undesirable, therefore, to have a uniform set of reading requirements for the various buildings. It would appear, however, that suggestive readings including the best of each type for the various grades for the schools in general should be drawn up for the reference of teachers and principals in choosing the books that they will actually use. Such a list related to any subject in any grade should be longer than that which would be used in any single building. This would give teachers and principals the greatest amount of help possible, and at the same time leave them free to select just the books that in their judgment their pupils can use most profitably.

Both school people and library people have been compiling such lists of books. From suggestions of this character, from the experience of teachers in St. Louis in connection with the large variety of reading material now actually being used, and from examinations of the books themselves, the subcommittee on reading ought to be able to draw up highly valuable suggestive lists.

MORAL EDUCATION

After months of deliberation the course of study committee on moral education has reported that there is no need of a separate period upon the program for the teaching of ethics or moral education. They recommend that the opportunity for ethical training offered by every subject in the curriculum be utilized by way of effecting the purpose.

The committee recognizes that the development of socialized thinking and socialized habits is the essence of moral training. They recommend that the life of the school and the studies of the curriculum be consciously shaped in such ways as to bring about this socialized consciousness and the corresponding habits. They would have history so taught as to develop width of sympathetic social vision, appreciation and understanding. They would have the geography used for similar

expansion of the social horizon. They recognize the value of the children's living with the great characters revealed in literature and biography, and taking on through unconscious imitation similar modes of thought and action. The labors of the manual training, domestic science, and sewing rooms, the activities of the school gardens and of the playgrounds, afford opportunities for healthful and desirable social living. Even so unlikely a subject as arithmetic, if developed in a modernized way, tends to bring the children, they say, into somewhat closer touch with the functions of men and women and of institutions in society.

These findings of the committee are thoroughly modern and thoroughly sound. Morality is an effect of thought and life, and can be developed only where thought is being performed and where life is being lived.

There is further work, however, for the committee to do. The committee must recognize that our studies have not been so taught in the past as to effect a sufficient quality and quantity of moral education. If this training is to be left for the teachers of history, literature, arithmetic, etc., and if a better character of moral training is to be accomplished, then a different character of history, geography, literature, arithmetic, etc., needs to be developed. Now, the committee which has been studying the ways in which these various subjects can be used by way of promoting socialized thought and action, has a duty to perform by way of pointing out to the committees in the other fields the demands upon their various subjects by way of fitting them as completely as possible for taking care of this dominant purpose. In reporting that it has no separate function to perform, the committee in effect declares that it has a function to perform in connection with the work of each of the various committees. They become a committee whose function it is to look after one particular aspect of the reports of all of the other committees.

This continuing labor is of the highest importance. The committee has shown by its findings that it understands the

nature of the moral training that is to be accomplished by each of the studies, and that it is in a position to judge of the adequacy of the recommendations of the various other committees by way of taking care of this all-important purpose. It is easy for other committees, seeing their subjects from different angles, to lose sight of materials or modes of presentation necessary for taking care of moral education.

It is further felt that the committee will not have accomplished its full labors until it has drawn up a statement for its report of the nature, materials, modes of presentation, etc., necessary for effecting moral development in connection with the teaching of history, biography, literature, and the various other subjects. The teachers need such a statement for their guidance, as they teach the various subjects.

GEOGRAPHY

The subcommittee on the course of study in geography very properly began its labors by an examination into the needs of the community on the side of geographical understanding. They undertook a positive program, and attempted to find the things in their field for which an affirmative case can be made out. Having such positive criteria of judgment, they felt they would be in a position to reject any geographical materials that do not serve the purposes. Among the various kinds of results that are to be secured they enumerate the following:

1. *Vocational understanding.*—They express the judgment that geography is of direct and immediate technical vocational service for only a few occupations; but that it is of immeasurable service for developing that general occupational intelligence necessary on the part of all within a democracy for the purpose of general supervision through public opinion of the various constituent social groups: manufacturing, commercial, mining, agricultural, and other industrial groups. They also refer to the value of geography to those who consume the products of the multitude of occupational groups.

2. *Social and civic understanding.*—The subject has, further, the all-important task of developing an understanding and appreciation of the interdependencies existing among individuals and social groups of every type. "The teaching," they say, "should cultivate sympathy with others whose needs, resources, efforts and feelings are like our own. Prejudices grow out of ignorance and are best removed by understanding."

3. They refer to the enrichment of consciousness through giving one a vision of the geographical environment that is as wide as the world itself. It is to give him intellectually, socially, and otherwise, a world that is bounded not by the narrow visible horizon of the region where he dwells, but which is bounded by a world horizon. Familiar thus with multitudes of things and relations, his consciousness is not only liberalized, but he is given the very practical power of adaptability to conditions wherever he may find himself.

4. The committee also refers to conventional values—a knowledge of geographical facts that people are supposed to know just because the schools have been in the habit of teaching them. The positive program of the committee naturally negatives this criterion. They show their negative attitude toward it particularly as they draw up the program of work. The minima of place geography is relatively brief and includes practically nothing beyond what people need to know in that general geographical orientation indicated by the committee in the three purposes above enumerated. The list of minimum essentials omits hundreds of place names that for most people have no value beyond the conventional one.

5. The committee refers to certain other general types of results of the subjective "mental discipline" character. It is not possible to judge the extent to which these subjective aims influenced the committee in its choice of geographical subject matter. The first three of the aims just mentioned are the ones that are most fruitful and appear to be the ones at least chiefly in the minds of the committee in their work.

Third Grade Geography

In the third grade the work is home geography. The children use no text beyond their readers, regular and supplementary. On the basis of topics given out the children are expected to observe the things of their environment; and then in class to discuss the matters and to organize their information. The purpose is to make them conscious of the geographical elements that enter into their environment, and thus to give them a clear alphabet of understanding so that later when they go to books, they will be equipped for intelligent understanding of the things treated.

Assistance is given to the teachers in the work by means of a very elaborate outline of specific topics relating to food, clothing, shelter, transportation, occupations, government and general physical environment. The outline is intended to be suggestive only, the teachers being permitted freedom to choose the things that can be observed in the region of the school. Many of the things, for example, cannot be directly observed by the children, and, therefore, cannot be home geography in the usual sense of the term. A thing that exists ten miles away is just about as distant to their comprehension, often, as if it existed ten thousand miles away. Some of the things of this type are: the wheat industry, oats, rye, rice, sugar cane, sugar beets, fruit growing, much of the cattle industry, wild animals, food products used in other parts of the world, merely to refer to some of those in the outline.

Even in the matter of home geography the observational knowledge of the children must often be exceedingly fragmentary and inadequate for real understanding. The city is doing well, therefore, to supplement this information as fully as possible. Very much is being done through the use of museum material, pictures furnished both by the museum and by the children themselves, supplementary reading, excursions, etc.

It is the judgment of the writer that the economic factor is somewhat too prominent in this third grade work. It must be remembered that the children, if of normal age for the group, are only eight or nine years of age and cannot have any great amount of economic understanding. It appears that the story element is somewhat under-emphasized. It would seem that the syllabus should give larger emphasis to the stories of "Around the World, Books I and II," "Seven Little Sisters," "Chatty Readings," to refer to certain books already recommended in the printed syllabus. Also we might mention "Eskimo Stories," "Child Life in Other Lands," "Little Folks of Many Lands," "Children of the Wigwam," "The Wide World," etc. Little people of this age are most interested in the stories of primal human action. They can be easily interested in the geographical background of this action because of its relation to the things in the foreground. Along with the story, therefore, there should be plenty of pictures, a proper character of maps for beginning children, and opportunities for constructive and dramatic activities. It would seem that the geographical stories should be at least equal in degree of emphasis with the other observational home geography. It appears to be thus in certain of the buildings. In very many, however, it is not of this character, largely because of the absence of the necessary reading, pictorial and map materials.

Fourth Grade Geography

The work of the fourth year begins with a little preliminary study of maps and globes, and the major earth divisions represented upon the globe and map of North America. Nothing is stated as to the amount of time that should be given to these two matters. It seems that some statement should be made, since it is possible for teachers to waste much time in doing elaborately preliminary things of this type which ought to be done quickly. Maps and globes should be mainly learned by using them.

The second general task recommended is the economic study of St. Louis and Missouri. It is very desirable that the pupils in the schools of the city should study carefully and intensively the things laid out in the syllabus under this heading. There is a question, however, whether such complicated economic study would not better be placed in the eighth grade rather than in the fourth. It must be remembered that the children are only nine or ten years of age. The topics deal with endlessly complicated industrial situations. The obstacles in the way of direct observation are exceedingly numerous. When observations are possible, usually they can be only fragmentary. The regular textbook does not handle the subject in any adequate way. There is no specially devised text material based upon the immediate situation. There are no supplementary books that can adequately serve the purpose. Fourth grade teachers are generally insufficiently informed. The materials are not placed at their disposal on the basis of which they can, in the time which they have at their disposal, gather the information for themselves as the basis for directing the work of the children. The syllabus gives no helps to the teacher by pointing out where the facts are to be found. While it may be easy to motivate the children where they can observe and where good readings are accessible, it is almost impossible to motivate their activities in the absence or inadequacy of both. Further, the work is not to be based upon the connected treatment to be found in a book, but upon the basis of an outline, which is probably an insufficient mode of organization in the case of children nine and ten years of age.

While the course as laid out is excellent, it is doubtful if it is rightly placed and whether it can be effectively taught in all the buildings in St. Louis with the materials now at the disposal of teachers and pupils in those buildings.

The third step of the year's work is an economic study of the United States. It begins with an examination of the map of the United States. This preliminary over-view is quite desirable. This is followed by imaginary journeys, the pupils

traveling east, west, north and south, and discussing the things that they meet with in these journeys. If provided with sufficient material of a detailed and illustrated character, this is excellent also. But when we come to the economic study of the wheat industry, potatoes, food, meat, sugar, cane, rice, beet sugar, fisheries, oysters, salt, etc., difficulties of the type above enumerated again present themselves. For the various reasons there mentioned, this work cannot probably in most schools of the city be very effectively done. There must first be books in the hands of the pupils which cover adequately these various topics. For this general topic there are a number of simple books published, but it appears that the buildings are not generally supplied with them.

The tentative course for the fourth grade which was examined is incomplete, but it appears that the pupils are likewise to cover the topics of similar economic character relative to other countries of North and South America and Europe during the year.

In referring to the placing of these economic studies, attention should perhaps be called to the fact that the schools of St. Louis do not attempt to teach United States history until the seventh and eighth grades because of the fact that it deals with such complicated social relationships; and then when it is taught, the social, industrial and economic developments of the past fifty years are passed over very lightly apparently because of the complexity of the social relationships. There is a feeling that the economic history is too complex for eighth grade pupils.

Now if this is true of the economic and industrial situation when viewed from the historical point of view, why is it not also true when viewed from the point of view of geography? As a matter of fact, the geography deals with economic situations in this most complicated period of all of our national history. If historical understanding of them requires greater maturity on the part of the pupils, it is difficult to understand why the geographical understanding of them does not likewise

require greater maturity than that possessed by children nine and ten years of age. It is the judgment of the writer that the fourth grade would best spend its time in reading interesting books of travel relating to regions of our own countries and to foreign lands; to reading stories of exploration and discovery; to reading the simple human connected stories of the lives of peoples in other lands; simple human stories of specific industries that are not too complicated in processes and relationships; and that they should read biographical and historical stories of peoples in various lands which reveal, in some degree at least, the nature of the country and its institutions as the background to the story.

Along with all of these things naturally there should be maps of a varied character: place maps, relief maps, transportation maps, production maps, climatic maps, rainfall maps, etc. There should be a wealth of pictures presented in various ways which reveal the details of the various things touched upon. Museum materials, of types of which St. Louis is well supplied, can also be highly serviceable for developing understanding of details. With all of these materials it is then easy to introduce numerous simple geography problems in the discussion.

The city is now doing much along these lines. So far as could be observed, it appears to be doing all that the materials at the disposal of the schools will permit. On the side of the museum, St. Louis probably ranks first among cities; on the side, however, of supplementary reading materials and maps, there is a great deal yet to be done before the work can be efficiently accomplished. The school people are doing, and for a long time have been doing their share, it clearly appears. The burden of responsibility rests upon the community's willingness to supply the schools with the things which they need for effective service.

Fifth and Sixth Grades

Problem geography constitutes the work of the fifth and sixth grades. The pupils are to be brought to a realization of causal and other relationships primarily, not the mere learning of unrelated facts. The committee has therefore recommended the most effective possible method for the purpose. The problems which they have suggested are highly significant, and they have given large assistance to the teachers in the details of the outline and in the general reading references appended. It is felt by the writer, however, that further improvement is possible by using problems that are less comprehensive and correspondingly more numerous. Those presented are very general. Reference is made by the committee to a difference of opinion existing between those who prefer the problem method of geography and those who prefer the outline topical recitation. It appears that the problems have been so chosen as to permit the making of a syllabus which can be used by either of these two groups of teachers. For each country, therefore, there is one comprehensive problem and one comprehensive outline of topics.

Now instead of treating Russia, Germany, South America, etc., on the basis of one problem to each, there probably should be dozens of problems relative to each: problems relating to transportation, to location of cities, to the agricultural situation and possibilities, the mining situation and possibilities, the distribution of population, etc., etc. We used to think that it was best in teaching arithmetic to give a few very difficult problems; nowadays we know that it is better to give a large number of easy problems of the size and character that ordinary people use in their ordinary thinking. The case is much the same with the geography problem work. The thing desired is a large number of those easy problems of the kind that people meet with in their ordinary thinking. It seems also that back of all problem work there should be geographical experience. Problems should probably not be imposed upon

pupils completely from without, but should in large degree, at least, grow out of their experiences. They certainly should be related to their experiences.

But how are pupils to have geographic experience? It is easy to see how it can be had in the case of home geography, and also in the case of those who travel; but geography needs to relate to the whole world, and for most pupils the amount of possible travel is not worth mentioning. They can, however, read travels, explorations, histories, the story of the development of industry, commerce, mining, etc., in various lands. A method is clearly suggested by the problem on the basis of which the geography of Germany is to be taught: "What causes have contributed to Germany's industrial development during the past fifty years?" There is only one way to provide an adequate answer. It is to trace the *history* of German development during the past fifty years, noting the various influences, political, industrial, geographical, etc., that have been at work. The story adequately presented should use maps of the varied character mentioned above. It should also present charts showing production in the various fields of effort, showing growth, expansion, etc. There should be statistical charts, graphic charts, etc. Everywhere throughout the experience of reading the story there arises the question, Why? While the answer is sometimes political, most often it will be in terms of those social influences, earth influences, and opportunities that are treated in the study of geography.

History, travels and such matters, provide the opportunities for vicarious experience on the part of the pupils. Unfortunately, however, for work at the present time, the books are not available in sufficient measure, and the other necessary helps are only in part at hand. Much, however, can be done if the general community is willing to supply the schools with such helps as are available.

Seventh and Eighth Grades

The value of the recommendation above mentioned is recognized by the subcommittee as shown by the committee's recommendation that geography in the seventh and eighth grades be taught in connection with the history of the United States. If this is a valuable way of teaching geography in the seventh and eighth grades, why may it not be also a valuable way of teaching very much of it in the fifth and sixth grades?

The labors of the subcommittee on geography, are probably not finished until the syllabus is made to cover the seventh and eighth grades. Even though the geography is to be taught in connection with the history, it is the geography committee who is best qualified to lay out those aspects of the teaching which should be carefully kept in mind in the conduct of the history work. Ordinarily, as history is taught nowadays, when well taught, large stress is laid upon the place-geography. More and more they are coming to use maps of excellent and varied character. But our histories do not yet sufficiently take into account the action of the various geographical controls or influences.

There is more reason for continuing the problem geography through the seventh and eight grades than there is for carrying it through the fifth and sixth grades.

The recommendations of the committee for these grades leaves out the geography of all the world except that of the United States. While a larger understanding of the United States is desirable and necessary, yet the *purposes* of the work as laid down by the committee, and the needs of the population of St. Louis, really demand an understanding of world relationships that goes much beyond that which can be done by the end of the sixth grade.

Much of this as it relates to the world in general could be taken care of in connection with a course in current events. Such a course, however, should be organized and conducted

as seriously and systematically as any other course. Naturally the details of it could not be laid out in advance, but it is possible to mention in advance the characteristics of an adequate discussion of current events, which would properly take care of the geographic elements.

The Course in General

The course stops at the end of the sixth grade, having begun in the third. The committee recommends during these four years 324 teaching hours. This is less than one-half of the time given to geography in Boston, Cincinnati, or Worcester, as shown by the committee's own figures. It seems to be not more than sixty per cent of the average of cities in general. Whether this is good or not depends in large measure upon the adequacy with which the necessary geographical matters are taken care of in connection with the social studies of reading, history and current events. With these latter studies well developed, it is conceivable that the time given to the separate study of geography might be cut down even further. Unless it is developed, however, in connection with these subjects with conscious attention, it is probable that the time allotted is less than desirable. The lack of any subcommittee report on history, civics, or current events, leaves the writer without any information as to the adequacy with which the geographic elements are to be taken care of in the later grades in connection with these subjects.

The course as it now stands includes nothing on Asia, Africa, Australia, or the islands of the sea, until near the end of the sixth grade—near the end of the entire course; whereas the usual spiral plan of teaching geography treats all the world at least twice. The course as laid out treats only Europe and America twice, and the rest of the world once. It seems, however, that before the latter half of the sixth grade there should somewhere be stories of Japan, of China, of

Siberia, the Sahara, Egypt, central Africa, India, the East Indies, etc., for the sake of awakening human interest relative to all important parts of the habitable globe. This liberalizing familiarity through stories in the grades before the sixth seems nowhere to be provided for. Something is done in many schools in connection with the supplementary reading, but it is not systematically done for the conscious purpose of attaining the results that are enumerated by the subcommittee on geography. They may do something if they happen to get a good set of geographical readings; and they may do nothing at all in case they get some other type of reading. To the extent that the results are actually important, it would appear that they should be provided for in the syllabus.

Certain of the buildings seem to be quite well supplied with library books for the purpose. These are to be found, however, usually only as single copies. Very few buildings appear to be well equipped on the side of sets of late modern geographical reading material, although all buildings seem to have certain sets, or to have access to such.

LANGUAGE AND GRAMMAR

The amount of time given to language lessons and grammar in the first six grades has been two lessons per week, usually of twenty-five or thirty minutes; in the seventh grade, three thirty-minute periods; and in the eighth grade, four such periods. This amount of time is very moderate. A considerably greater amount of time is given to each of the subjects of reading, spelling, handwriting, arithmetic, and drawing.

The work in the past as indicated by the syllabus now being superseded, and by observation of the work, has been chiefly a study of the technical grammar. The syllabus has recommended but a very small amount of composition work. In the actual teaching in the majority of the schools the composition work in the language class seems to have been accorded a

minor position. The syllabus, for example, recommends two compositions per quarter—one every five weeks. The technical grammar which has constituted almost the entire work in the majority of the schools has been based upon a textbook system that the subcommittee on the teaching of English appears to consider not entirely modern.

The tentative revised course of study in this subject appears to be a putting into systematic form of the best work that has been going on within the city, so as to make this type of work general in all of the schools. They recommend the teaching of a diminished quantity of technical grammar. They recognize that the essential function of the technical grammar for the majority of the people is nothing other than an aid in keeping their language correct. The committee would therefore have taught those grammatical matters that relate to those errors of speech that are most frequent. Other technical matters not actually needed for keeping speech correct are generally not recommended.

On the other hand, the committee has presented in great detail plans for developing the composition—the oral and written expression. They have tried to give a great amount of assistance to the teachers in matters of method, organization, and materials to be used. The new program represents a very long step in advance. It is not revolutionary, however, since the things are actually being done, in large measure at least, in the more progressive schools of the city, or in those most favorably situated for such development.

We must commend in no uncertain terms the majority of the recommendations of the committee:

1. That the oral and written expression of the pupils in all of their work be the central thing in all training in language; that grammar be but one of the several means of promoting effectiveness in this expression.

2. That in all of the training in expression the attention of the children be focused upon the thought material rather than

upon the language; that the form of expression be only a means of promoting the effective expression of the thought, which is primary.

3. That while all recitations and reports in connection with all subjects should be employed for language training, yet for the sake of making children conscious of linguistic principles, of errors made, and of modes of correction, it is desirable to have a certain amount of this work set apart and taken care of in the separate language class.

4. That on the side of correction of errors, the thing primarily to be aimed at is the power of self-criticism and the habit of watchful self-criticism.

5. That on the more constructive side of expression children have good models placed before them and be shown the characteristics of good models; and that they be given a large quantity of actual practice in the oral and written expression along the lines made clear in the models presented.

6. That so far as possible in all of the work of the school, the pupils do the talking and the writing, not the teacher. "Pupils must talk more in school; teachers must talk less."

7. That the course in language training should be quite different in the different buildings of the city, owing to the large linguistic differences in the population of different school districts.

8. That all oral and written expression should be vitalized and have reference, so far as possible, to an audience or to readers.

The major recommendations of the committee have been drawn up so carefully and so thoughtfully that rarely can any exception be taken to them. There are two matters, however, which it seems should be mentioned. The committee recommends, on the one hand, that the oral and written expression

of the pupils in connection with the teaching of all subjects should be employed for the training in such expression. References to this type of work are very brief, and the method work is not developed. Definite suggestions are not given teachers as to methods of accomplishing it. No suggestive outline is presented, nor even any but the most general suggestions made. On the other hand, the committee recommends the writing of original imaginative stories, dramas, etc., based upon personal experiences, imaginative situations presented in literature, pictures, the beginnings of stories which are only partially told, and characters with which they have become acquainted in their reading. And in connection with this they have given a great wealth of definite suggestions. Method and motive appear to be that with which we have become familiar in that composition work of high school and college which appears to be designed for members of the literary profession. Children very early are to be made familiar with the characteristics of plot, story form and structure, devices for securing effectiveness, etc. To this type of work the committee has given major emphasis. It has presented long lists of possible subjects and has entered into a great amount of detail as to methods of work.

It is the judgment of the writer that the relative emphasis upon these two aspects of the work should be exactly reversed; that the maximum amount of attention should be given to that expression of the pupils which grows naturally out of work well done in all of the subjects, and that only a minimum amount of attention should be given to the imaginative story work. The latter perhaps should also be largely optional with the children, since there are large numbers who have no particular ability in this direction, and who can profit but little from it. It is desirable, however, that all should be able to express themselves with reasonable clearness, force and accuracy, in connection with all of the types of expression that as youths and adults they will be called upon to employ.

Current progressive developments in the teaching of geog-

raphy, history, nature study, elementary science, current events, etc., are demanding the use of exactly the kinds of material needed for effective development of the language practice in connection with these various fields. Collateral readings, observations, excursions, the problem geography, the problem history, problem science, etc., demand effective presentation under conditions that give the one reporting a real audience and give him real motives for effective expression. It may be objected that this is all too prosaic, too matter-of-fact for the expression work of the children. In reply, we must present the counter-objection that is always presented when we suggest the modern methods of teaching history, geography, current events, etc., namely, that it is making the work too easy and too interesting for the pupils. One must also point to the experience of those teachers who have been well-equipped with the materials necessary for modernized teaching of the subjects mentioned, and who have consciously used them as the basis of the training in expression. The pupils are in fact interested, and they do value it at its proper worth.

It must further be mentioned that our educational work is not likely to make a mistake on the side of too much reality. We live in an age when it is difficult to bring children and even adults into sufficiently close contact with the realities of the world. The conversation and thought of youth and adults tend in many things to be insufficiently related to fundamental realities by which they are surrounded and with which they must deal. Less than in the past is the need of training them in the task of developing imaginative unreality. The preponderance of imaginative composition work recommended by the committee looks like an exaggerated over-emphasis upon just the things upon which emphasis is not needed.

Children should, we are told, live largely in the world of fiction, and fancy, and unreality, and imaginative luxuriation. This is undoubtedly true; but if during childhood and youth they enter sympathetically into the folklore of the world, the

various of the world's great mythologies, drink deeply of the world's great imaginative literatures, enter into the imaginative stories portrayed at the theatres and in the movies, etc., it appears that there can be no dearth of horizon-expanding influences of this character.

The committee says: "A course of study of the vernacular should be largely an outline of content and methods in accordance with which teachers are to plan their work." In obedience to this principle, the committee has presented a great wealth of suggestions for the systematic work of the language class itself; but since this can be only a minor portion of the total training in expression, it would appear that the course of study should present content and methods of work for the teacher's guidance in the training in expression in connection with the various other subjects. The various committees in the other fields probably conceive their function as relating mainly to the subject-matter content of their studies. The subcommittee on language and grammar alone is the one that is compelled to take the expression point of view in a specialized way. It seems that they should handle the topic in their own syllabus by way of presenting points of view, samples of topics, and methods of work, and that they should be responsible for seeing that the expression side of the content-subjects is adequately taken care of in the various printed syllabi. Professional people sufficiently understand the needs of the situation so that any difficulty on the score of special committee prerogatives is not likely to arise.

SPELLING

The report of the subcommittee on spelling is an excellent treatise on the pedagogy of the subject. Its treatment of aims, methods, materials to be used, and distribution of the work through the grades, is comprehensive and well-balanced. If the work in the schools is done in obedience to the principles

enunciated by the subcommittee, it cannot but be efficient and economical.

The committee presents no list of words that are to be covered; nor do they indicate any particular textbook lists. Instead they describe types of lists that are to be formulated for all of the grades, beginning with the first. The particular lists are to grow up out of the teaching experience within the city school system, and they will vary from building to building, from class to class, and even from pupil to pupil, according to varying needs.

Among the many commendable things recommended, the following appear to be among the most noteworthy:

1. The work takes account not only of the "regular spelling," but also of word-study, the "incidental spelling" experience in connection with composition and reading, the vocabulary expansion produced by the proper treatment of all subjects, and dictionary work.

2. A "common study list" is to be used for all pupils in the early grades. In the later grades, while a "source list" remains a common working list, yet after rapid preliminary tests pupils study from "individual lists" only those words that they have actually missed on the test.

3. For the later grades, in the systematic study of words which they have actually missed upon the preliminary test, and for any other study of difficult words, pupils are given an elaborate fixed mode of study which involves a great sensory and intellectual variety.

4. This fixed mode of study is to be printed and placed in the hands of pupils as a guide to independent work. This is a highly commendable mode of teaching pupils how to study.

5. They emphasize the need of developing habits of good spelling, habits of watchfulness on the part of the pupils as

to the spelling that they do in their written work, a "spelling conscience" which makes people sensitive to errors of spelling and desirous, because of general public opinion, of spelling their words correctly.

6. Pupils are to be given practice in the detection of spelling errors, in written papers and on spelling tests.

7. It is recommended that pupils of a class be divided up into groups, and that a kind of Lancastrian tutorial system be employed for the sake both of economy and of effectiveness.

8. Caution is to be exercised by teachers in using the correction of the composition as a method of enforcing watchfulness in the spelling as they do their written work so as not to inhibit thought, or to bring about the substitution, on the part of the pupil, of a poor word that he can spell instead of a good one which he cannot.

9. For the daily lessons the committee recommends both short lists and long lists, but makes clear the distinction in nature and in methods of use of these two types of list so as to bring about a balanced type of work, that is intensive for those words requiring intensive work, and extensive for those more numerous words in connection with which intensive study is not required.

10. The committee emphasizes the desirability of having "subject lists" which involve the special vocabularies of the different subjects of the curriculum. They point out that the meanings of the words of these special vocabularies are developed in connection with the subjects themselves, the spelling class having then the function of taking words having already a meaning content and developing certain additional consciousness relative to the letter content.

11. The plan presented takes care not only of differences of children in the matter of individual needs, but also of differences of individual ability.

12. Account is to be taken of the best methods of motivating the spelling work. A variety of good methods are presented. Teachers are cautioned against using certain questionable ones.

13. Not only do the word lists change as the pupils advance through the grades, but the methods to be employed on the different levels change just as fundamentally.

14. The committee has presented a reasonable solution of the problem of presenting a "practical" course, and yet at the same time using lists of words that are anticipatory in reference and cover a much wider range than the active written vocabulary of the pupils at the time.

It is not possible for the writer to take exception to any of the major recommendations of the subcommittee on spelling. In actual practice teachers may go astray in the application of some of them by over-emphasizing or under-emphasizing or using wrong materials, etc.; but an improper application does not invalidate a general recommendation.

It is because of the possibility of teachers going astray in at least a few buildings in so large a city that it would appear desirable for so well-informed a committee to present full suggestive lists of words for the common list, the later source list, the subject list, the spelling rules that are to be learned, which they recommend, the types of word-study that should be carried out, the historical aspects of word development that are to be introduced, etc. Bulding probably should be left entirely free to use such suggestive materials or to substitute others, subject to supervisory approval; but until teachers have worked out in the concrete the various suggestions of the committee, and until the time arrives when they are sufficiently proficient to go alone, such detailed suggestions as here recommended are exceedingly valuable for effective and economical work. It ought to be possible at least to draw up suggestive and non-prescriptive minimum essentials which are reasonably valid for the usual work throughout the city. These

would then serve for the majority of schools, at least, as the substantial foundations on which to build further by way of meeting the larger needs or more specific needs of particular schools.

It is possible that the committee has these things in mind. The tentative report submitted does not claim to be complete and final.

MANUAL TRAINING FOR BOYS

The report of the committee on manual training for boys devotes a considerable proportion of its space to a discussion of the purposes of the work. The purpose most frequently emphasized is formal discipline. The committee states that the construction of a number of small and inexpensive objects from raffia, cloth, cardboard and wood is instrumental in developing a large variety of mental and social characteristics.

As a second purpose the committee stresses vocational guidance. They say: "The aim of manual training is not to give trade training, but to provide a wide range of activities to the end of developing a degree of skill therein, an interest in and an insight into a variety of materials and processes. This will afford an intelligent basis for taking up any one of a number of vocations. We believe that a wide range of manual activities and the provision for the initiation of a variety of mental processes will demonstrate to the student his individual powers or gifts, and reveal them to teachers and parents."

The third purpose is an appreciative understanding of the products turned out by others which one is to use as a consumer. The training is to help him to choose wisely out of the multitude of offerings in all markets.

After the clear statement of these purposes in the introduction, one expects to find a series of exercises recommended that will be instrumental in realizing all of these purposes. It is

probable that as the course is drawn up it is adjusted to meet the demands of only the first or mental discipline purpose. The first three grades make a number of small objects from raffia, colored paper, cloth, paste, cardboard, linen crash, carpet warp, etc. The fourth and fifth grades are to make a number of small toys from wood, using: coping saw, file and sand-paper, thin basswood, nails, string, brace and bits, paints and oils. The sixth and seventh grades do woodworking, mostly cabinet-making, of a simple nature, using the usual assortment of tools for the purpose. In the eighth grade they do more specialized work in cabinet-making.

The specific things to be made in each of the later grades except the eighth are definitely laid out, and the report makes no provision for initiative on the part of the students in choosing the things upon which they will work. The eighth grade course provides for initiative and choice of projects within the general field of cabinet-making. As laid out in this revised plan, the course is simply the usual formal woodworking outline.

While this work may meet the formal discipline demands—we do not affirm this—the merest inspection reveals the fact that it is inadequate for meeting the demands of the second and third purposes enumerated by the committee. If the manual training is designed to introduce a great variety of activities so as to permit the boys to try themselves out in connection with a great variety of occupations for purposes of vocational guidance, it is quite clear that the course does not make the necessary provision. It will permit them to try themselves out in the woodworking field—and in no other. They do not come into contact with the occupational fields of printers, electricians, gardeners, agriculturalists, iron and steel-workers, sheet-metal workers, leather industries, clothing industries, brick, stone and cement industries, textile industries, food manufacturing industries, etc., etc. It is not possible for a boy to try out his aptitudes for any one of these occupations on the basis of what the manual training course

offers. Either the committee is mistaken in its statement of the second purpose, or it is mistaken in its choice of the means to be employed in accomplishing the purpose.

The course is equally inadequate for training the general consumer for judgment and appreciation of the economic products placed before him. It does not train for either appreciation or understanding of the products of the printer, the food manufacturer, the weaver, the tailor, the shoemaker, the carpet manufacturer, the laundryman, etc., etc. It may and often does develop some appreciation and understanding of furniture. This is, however, but one of many fields. It is possible, too, that an understanding and appreciation of furniture at least equal to that now developed after several years of woodworking in the elementary school might be developed with less labor and time and cost by a systematic study of the finished specimens of furniture factories, handled by the school museum in the way that it handles other illustrative materials.

A significant suggestion is made in connection with the work of the eighth grade in the brief recommendation: "Visits to various industrial plants; discussion of city and state industries." This recommendation is excellent by way of taking care in part of the second and third of the committee's purposes. But what are the plants that are to be visited? It would seem that a different list should be made out for different quarters of the city; and that the committee should make out suggestive lists. Then in connection with each of the different industrial plants, what are the things that are to be examined into by the children upon their visits? What are the things that should be read and discussed previous to the visit by way of laying the necessary foundation for effective and intelligent observation? What method of reporting is recommended? What industries should be visited by classes and what ones may be observed by individuals only? How is the work to be organized so as to make it both economical and

effective? How is the coöperation of the managers of the various industrial plants to be secured? In connection with the "discussion of city and state industries," what are the facts to be presented to the students, and how are they to be presented? Since teachers are not sufficiently informed usually, where are they to obtain the necessary information? Where are the reading materials to be had that will effectively present city and state industries?

These questions are not presented by way of criticizing the work of the committee. We wish to indicate that in referring to an important field of teaching, the committee has only pointed out one of the large problems for its own solution. It will not have accomplished the tasks assigned to it until it has in some degree answered these and other similar questions. A course of study intended for guidance should point out the things that teachers do not know. If the committee does not know them well enough to point them out, they cannot expect the teachers to know, and they cannot expect their general recommendations to be fruitful.

We recommend that the work of the committee be continued until it definitely rejects the second and third purposes enumerated, or until it lays out a course of training that will be adequate for meeting the requirements of the second and third purposes.

It is the judgment of the writer that the purposes just referred to are wholly valid; that in the light of these purposes the work recommended in the course as well as that now carried on within the city schools is meager, formal and inadequate; that the purposes require a large expansion; that the work should require more of the pupils' out-of-school time; that manual skill should be subordinated to industrial insight and intelligence; that a critical study of the finished products of industry through observation and examination be at least as prominent a portion of the course as the making of objects on the part of the pupils; that in connection with the products

and processes of each occupation studied in the shop and observed in the neighborhood, there be a carefully selected series of readings for the purpose of further illumination; and that for accomplishing all of these things a larger appropriation be set aside by the school city for the purpose.

HOUSEHOLD OCCUPATIONS

The Committee on Household Occupations has drawn up an excellent statement of the purposes of the work, and of the reasons why girls should be trained in the various household occupations. They indicate in a general way the kinds of subjects that should be included in such training.

The committee has not yet drawn up a course of study in this field, however. They have not indicated the kinds of studies and other activities that should be taken up in each of the elementary grades. They have not indicated the exercises to be performed, the materials to be used, nor the sequences. They have not indicated the science that should be taught by way of properly understanding each of the practical domestic science and household art situations; nor have they indicated the arithmetic, the household accounting, the household economics, etc., needed for the purposes. They have not suggested lists of readings, scientific, economic and social, for widening and deepening the understanding over and above what can be had in sewing-rooms and kitchens. The report of the committee presents the point of view in a very superior manner; and this serves as a good introduction to a course. Their next task is, however, to draw up an adequate course of study and training from the point of view expressed in this introduction.

It is not possible to pronounce judgment upon the course of study in household occupations until this report is com-

pleted. It seems scarcely fair to the schools to judge on the basis of the old course which is now being superseded—unless the committee definitely says that the reason for not drawing up a course of study was due to the fact that they consider the old course sufficient for present purposes.

CHAPTER XII

READING

BY WILLIAM S. GRAY

*Summary*¹

This chapter reports the results of systematic tests in oral and silent reading which were given to 11,438 pupils in forty elementary schools. This work was under the direct supervision of William S. Gray, who was assisted by twenty substitute teachers and by the principals of the schools in which the tests were given. Standardized tests devised by Mr. Gray were used. These tests had been given in a number of other large cities and therefore furnished a basis for comparison.

In brief, the tests showed that upon the basis of present attainment in various cities the results secured in St. Louis are very satisfactory indeed. Both in oral reading and in silent reading St. Louis surpasses the results secured in a number of other cities. Variations among schools are very wide. An analysis of the results of the tests together with observations carried on in the classroom showed that these variations in achievement were accompanied by variations in age, sex and nationality of pupils, by variations in emphasis given to various phases of reading ability, and by variations in subject-matter and methods.

¹ By Chas. H. Judd.

RECOMMENDATIONS

The major recommendations growing out of this study may be summarized briefly as follows:

a. That the quantity and quality of the supplementary reading material used throughout the grades be made the basis of careful investigation to the end that the present supply be enlarged and enriched.

b. That some of the time now devoted to oral reading in the intermediate and grammar grades be given to the development of effective habits of silent reading.

c. That methods of teaching both oral and silent reading be thoroughly investigated by teachers and supervisors to the end that many of the excellent methods used by the more skillful teachers may be explained and demonstrated to those who are in need of help.

d. That methods of testing the results of teaching reading be adopted by both teachers and supervisors. In the case of supervisors frequent tests should constitute a part of the regular routine of supervision. In the case of teachers these methods should be in constant use in determining the direction of the improvement made by the pupils and in determining the most pressing instructional needs.

READING

The study of reading in St. Louis was carried on by means of systematic tests in oral reading and in silent reading. In addition, classroom observations were made by the writer in eighty recitations in reading. This chapter will be devoted largely to a report on the systematic tests of reading. These results will be supplemented frequently by facts gained from classroom observations.

The distinction between oral reading and silent reading has been observed throughout this report. In the past little attention was given to this distinction, but during recent years it has been recognized as one of first importance. In the primary grades of the elementary school special emphasis has usually been given to oral reading. This type of reading proves to be appropriate and economical during that period in which the pupil is mastering the fundamental steps in reading. During the intermediate and upper grades the pupil is frequently called upon to read orally in connection with many class exercises. On the other hand, the pupil soon learns to use reading as a means of securing ideas for himself and he substitutes silent study for oral reproduction. During the larger part of his school life the progress of a pupil depends upon his ability to master the thought of the printed page during periods of silent study. Furthermore, under most ordinary situations of life one reads silently for the purpose of gathering ideas and not for the purpose of oral exhibition. With this recognition of the very great importance of silent reading it is quite clear that the quality of instruction in reading must be determined upon the basis of achievement both in oral reading and in silent reading.

In giving the reading tests certain passages were used which had been carefully graded to suit the abilities of school children and which had been given to pupils in a number of

other school systems. A double advantage arises from the use of material which has thus been rated through previous use. First, the relative difficulty of the various selections is known, and second, the earlier studies yield comparative results which may be used to supplement the results obtained in St. Louis.

In order to secure uniform results from standard tests it is necessary that they be given under conditions which are similar. To this end the principals of forty schools of St. Louis were called into conference and were given a demonstration and an explanation of the test. In addition, the service of twenty substitute teachers was secured and these teachers were trained for their work through explanation and demonstration. The principals gave the majority of the oral reading tests, but they were assisted to a considerable extent by the substitute teachers. The silent reading tests were given in the second and third grades by the substitute teachers and in the remaining grades by the classroom teachers. Inasmuch as the pupil writes his own reproduction and answers to questions in the silent reading tests for the intermediate and upper grades, there are few opportunities for variations in achievement due to the direct influence of the teacher. During the week of the testing the writer circulated among the schools, observed some of the work in testing and saw reading as it was carried on in the classroom.

A. Oral Reading Tests

Tests in oral reading were given to 11,438 elementary school pupils in forty schools of St. Louis. These pupils represented 670 different classes distributed about equally among the various grades of the elementary school. On the average seventeen pupils were tested from each of the above mentioned classes. Of the total number of pupils tested 10,526 were chosen from the second and fourth sections of the grades in thirty-eight schools. Inasmuch as the records of these pupils can be pre-

sented in much more condensed form than can the records of all of the pupils tested, the records of the pupils of the second and fourth quarter sections of each grade have been made the basis for the report on reading.

Certain characteristics of the pupils of each grade are revealed in Table I, which shows the age-grade distribution of 5,118 pupils in the fourth quarter sections of each grade. The numbers in the horizontal line above the table designate the ages from six to eighteen years, inclusive. The Roman numerals in the vertical column at the left of the table designate the various grades of the elementary school. The numbers in the vertical column at the right of the table indicate the number of pupils in each grade. The numbers in the table indicate the per cent of pupils of each grade who are in each age-grade group.

The table shows a very wide distribution of ages in each grade. For illustration, there are pupils in some fourth grades who are two times as old as other pupils in the same or different fourth-grade classes. Furthermore, there are pupils in some second-grade classes who are as old, if not older, than the younger members of some eighth-grade classes. As will be shown later in this report, such a wide distribution of ages among pupils of a supposedly homogeneous group complicates seriously the problem of oral reading instruction.

The material for the oral reading test consisted of a series of twelve short passages arranged in the order of increasing difficulty. These passages had been carefully selected from readers, textbooks and current literature, and adapted to the interests of pupils of the various grades. The arrangement of the passages and the steps of difference in difficulty had each been previously determined after several thousand pupils had been tested. The following passage is the fifth one of the series and illustrates the length and general character of most of the passages:

TABLE I

AGE-GRADE PROGRESS TABLE FOR 5,118 ST. LOUIS PUPILS IN THE FOURTH QUARTER SECTIONS
IN TERMS OF THE PERCENTAGE OF PUPILS IN EACH AGE GROUP

Grade	6	7	8	9	10	11	12	13	14	15	16	17	18	No.
I....	29.3	53.3	14.2	2.6	.6	....	....	....	....	....	..	..	..	655
II....	14.7	56.2	22.4	5.1	1.3	.3	....	....	....	..	..	..	692
III..2	12.4	49.6	25.6	9.2	2.2	.8	....	....	..	..	..	671
IV...	1.1	11.8	41.5	26.6	12.8	4.4	1.4	.3	.1	..	..	655
V....8	12.9	40.3	18.1	13.2	3.9	.8	..	..	..	631
VI...2	1.1	17.4	38.7	31.1	9.1	2.2	.2	..	..	659
VII..	2.5	18.1	43.2	27.1	7.0	1.8	.3	..	569
VIII.3	4.1	23.9	38.1	24.2	8.5	.7	.2	586

"One of the most interesting birds which ever lived in my bird-room was a blue jay named Jackie. He was full of business from morning till night, scarcely ever still. He had been stolen from a nest long before he could fly, and he had been reared in a house long before he had been given to me as a pet."

The tests were given in each school by the principal or by a substitute teacher, in a light, convenient office or room apart from the general classroom. As each pupil read, a record was made of the number of seconds required to read each paragraph and of the number of errors which were made of each of the following types:

A. Gross mispronunciations which include such errors in pronunciation as indicate clearly that the word is too difficult for the pupil to pronounce.

B. Minor mispronunciations which include the mispronunciation of a portion of a word, wrong accent, wrong syllabication, omission of syllables, etc.

C. Omission of words.

D. Insertion of words.

E. Repetition of words or groups of words.

F. Substitution of one word or group of words for another.

No record was made of the quality of the expression with which the pupils read. In several previous investigations such a record was kept. The conclusions drawn from these records are well illustrated by the following quotation from the reading report in the Grand Rapids survey:

"Furthermore, the principals who gave the tests made a record of the quality of the reading in terms of A, B, or C.

If the reading was very well done, this fact was indicated by placing an A before the paragraph. If, on the other hand, the reading was very poorly done from the standpoint of expression, the fact was indicated by placing a C above the paragraph. These records of quality show that the time records and records of errors can be relied on as satisfactory measures of the child's reading ability. In nearly every case a pupil received a quality mark of A if the paragraph was read at a normal rate with not more than one or two errors. On the other hand, as the number of errors increased and as the rate decreased the quality mark which was recorded was B or C."

The oral reading scores which are used in this report are calculated on the basis of the time required to read a paragraph and the number of errors made. The reduction of each child's record to a simple numerical statement is based on a system of scoring which turns into quantitative terms the fact that a paragraph should be read in a certain amount of time with a limited number of errors. If, now, the pupil exceeds the amount of time which has been found in earlier investigations to be common and if the number of errors increases, the amount of credit which he gets for reading a paragraph should be proportionately reduced. The total score for an individual is found by calculating the total amount of credit due the pupil on all the paragraphs which were read. The average class score is found by calculating the arithmetical average of all the individual scores in the class. A more detailed description of the test and of the methods of scoring may be found in a monograph entitled, "Studies of Elementary School Reading Through Standardized Tests," The University of Chicago Press, Chicago, Ill.

The average score for each grade in which the tests were given appears in Table II. The average and median scores for each grade are indicated at the foot of the table. The average score is the mathematical average of the scores of all the pupils for the grade as a whole. The median score

TABLE II
AVERAGE SCORES IN ORAL READING FOR THE SECOND AND FOURTH SECTIONS IN EACH GRADE IN
38 SCHOOLS

Schools	I		II		III		IV		V		VI		VII		VIII	
	4		2	4	2	4	2	4	2	4	2	4	2	4	2	4
Ames	62	52	53	57	52	52	45	51	53	60	56	55	49	54	44	49
Bates	19	37	42	46	45	48	44	53	42	54	48	51	44	53	46	47
Benton	30	33	41	42	49	54	52	50	52	51	54	55	50	55	51	54
Bryan Hill	43	43	45	48	50	50	45	52	46	48	46	48	43	49	47	57
Clark	24	44	51	53	57	61	56	61	52	52	48	54	56	58	56	55
Clay	59	44	52	49	45	51	49	45	45	45	..	42	39	47	58	59
Clinton	47	37	48	46	44	53	42	49	49	49	48	50	48	47	43	52
Columbia	35	33	35	38	42	52	48	47	48	47	55	51	45	48	..	46
Divoll	44	40	46	52	57	47	50	54	49	54	49	50	49	51	49	48
Fanning	27	38	35	52	48	50	50	54	50	54	53	56	51	50	46	51
Farragut	26	29	44	46	45	43	44	46	44	46	48	43	45	42	43	40
Field	50	44	51	55	55	54	43	56	43	56	46	55	51	48	50	61
Franklin	50	46	50	52	57	57	58	58	58	58	58	58	54	..	53	51
Fremont .....	..	30	37	47	41	54	54	54	54	54	..	53	55	52	43	50
Froebel	33	33	53	43	..	..	49	52	49	52	50	47	..	..	..	..
Garfield	15	35	46	53	48	53	50	51	50	51	49	57	53	55	52	51
Glasgow	37	43	54	53	46	54	52	52	52	52	55	54	44	52	41	47
Grant	36	37	41	47	54	57	49	50	49	50	50	53	58	49	42	49
Harney Heights	11	24	37	46	49	48	45	44	45	44	45	53	43	48	43	47
Harrison	34	48	51	56	42	53	52	56	52	56	51	..	..	57	53	54

TABLE II—Continued
 AVERAGE SCORES IN ORAL READING FOR THE SECOND AND FOURTH SECTIONS IN EACH GRADE IN
 38 SCHOOLS

Schools	I		II		III		IV		V		VI		VII		VIII	
	4		2	4	2	4	2	4	2	4	2	4	2	4	2	4
Henry	5		27	46	47	55	50	55	47	..	56	54	50	60	53	56
Hodgson	43		43	49	43	49	47	49	47	54	51	53	44	46	50	46
Irving	47		41	53	51	54	56	53	50	53	43	50	47	53	46	48
Jackson	55		42	55	53	55	54	55	50	55	52	56	51	56	..	52
Laclede	51		47	54	56	61	59	57	58	52	..	61	51	48	49	49
Lafayette	49		30	43	40	48	47	49	42	39	38	48	41	46	..	..
Longfellow	44		43	49	50	53	51	54	44	61	..	54	53	..	54	55
Madison	61		42	49	47	51	47	49	52	51	49	..	53	52	54	53
Mann	29		33	45	46	45	..	48	47	48	45	48	43	51	50	50
Marshall	27		33	46	42	43	42	50	49	44	48	48	..	49	44	53
Oak Hill .....	..		35	32	37	45	47	47	44	44	46	46	44	47	50	52
Pestalozzi	31		42	52	49	..	44	48	45	52	47	47	..	..	..	..
Riddick	63		40	56	51	51	50	59	61	58	54	60	55	56	58	57
Shaw	15		36	45	40	48	58	45	42	..	46	49	47	57	54	57
Shepard	33		42	53	50	53	50	49	50	57	..	46	..	..	44	49
Washington	41		38	50	49	46	46	55	47	54	51	47	52	51	50	52
Webster	51		37	50	55	54	52	57	51	49	55	50	49	47	43	48
Wyman	31		41	46	43	48	45	49	49	45	49	49	45	46	34	42
Average	38		39	47	46	50	49	52	49	51	50	51	49	51	48	51

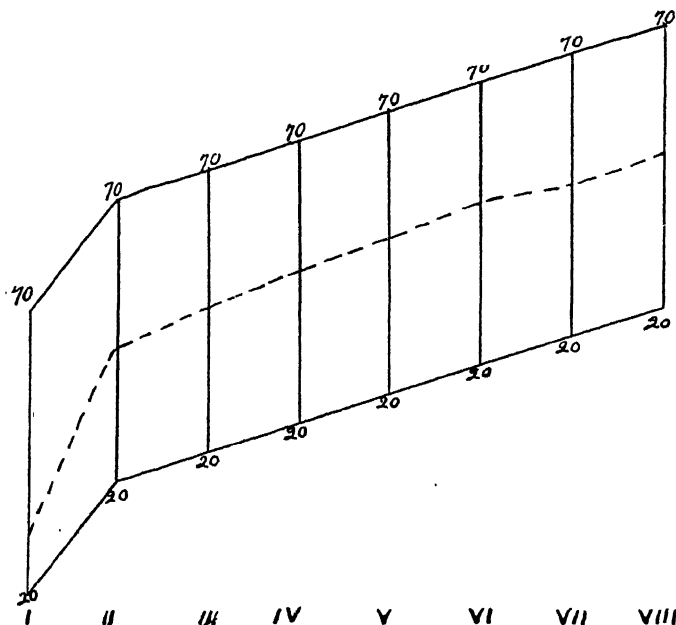
is the score of that class above which lie half the class scores and below which lie half the class scores. The scores which lie at the first and third quartiles in the series are indicated by Q_1 and Q_3 . These scores are determined by arranging all the class scores for a given grade in serial order from the best to the poorest and marking as Q_1 that score which lies one-fourth of the way from the top of the series and as Q_3 that score which lies three-fourths of the way from the top. The range in scores from Q_1 to Q_3 is indicated as P. E. and is found by subtracting Q_3 from Q_1 .

One further word of explanation is necessary in order that the diagrams in which the results are presented may be readily understood. Ability to read a certain passage without error means less on the part of a pupil in the upper grades than on the part of a pupil in the lower grades. Grades must be compared with each other, therefore, by recognizing different levels of expectation. These different levels, as determined from four thousand tests, can be expressed graphically as indicated by the vertical lines in Diagram I. Each vertical line represents the scale for a grade and begins below at the point where the score of 20 should be represented. Higher scores can be represented by appropriate distances along the vertical line above 20. In Diagram I the vertical lines end at the points where the score of 70 belongs for each grade. The full drawn oblique lines above and below connecting the successive 70's and 20's respectively indicate the curves of progress which would result if in the one case all scores were 20 or if in the other case all scores were 70. The dotted line near the middle of the figure represents the average score in oral reading of several thousand pupils. The diagram is so organized that all scores which lie on the same horizontal level represent equal amounts of achievement. Thus, a score of 60 in the first grade is equal to a score of 40 in the second grade, 35 in the third grade, 30 in the fourth grade, etc.

ACHIEVEMENT IN ST. LOUIS AS COMPARED WITH OTHER CITIES

In Diagram II the average achievement of St. Louis is compared with the average scores of Cleveland, Ohio, and Grand Rapids, Michigan. The diagram shows that in all grades the

DIAGRAM I
PROGRESS OF 4,000 PUPILS IN ORAL READING

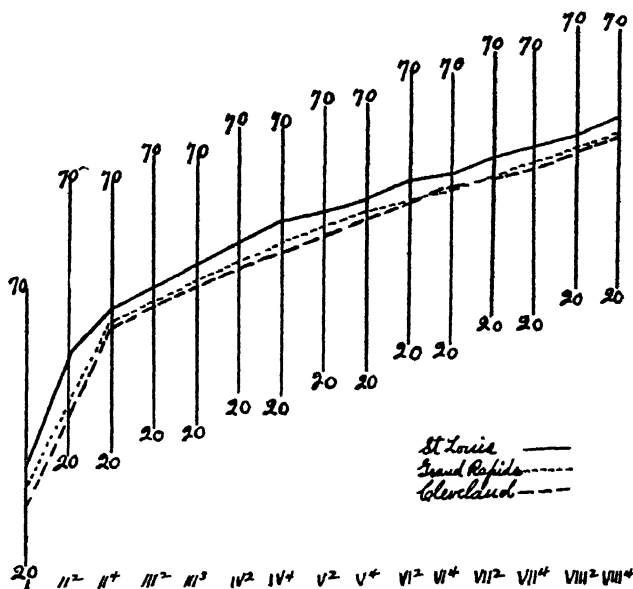


scores of St. Louis are superior to those of Grand Rapids and Cleveland. Inasmuch as the tests were given in Cleveland in June, 1915, and in St. Louis in June, 1916, it is evident that in all grades after the first the pupils in St. Louis are approxi-

mately one-half year in advance of the pupils of the corresponding grades in Cleveland. Inasmuch as the tests were given in Grand Rapids three months earlier in the school year than in St. Louis, it is evident that the achievement in St. Louis and Grand Rapids approximates the same general level. Up to the present time tests have been given in twenty-five or more school systems. Of all of the reports received those of St. Louis show the highest general level of achievement. These facts indicate very clearly that the efficiency of instruction in oral reading in St. Louis is very high indeed.

DIAGRAM II

AVERAGE ORAL READING SCORES FOR 10,526 ST. LOUIS PUPILS,
4,066 GRAND RAPIDS PUPILS AND 2,193 CLEVELAND PUPILS



The variations in the achievement among the schools in each of the cities under consideration may be compared by means of the facts given in Table III. The table shows a noticeable difference in the amount of variation among first-grade

TABLE III

P. E. DISTRIBUTION FOR EACH GRADE IN EACH OF THREE CITIES

	I	II	III	IV	V	VI	VII	VIII
Cleveland	17	19	8	8	7	9	8	7
Grand Rapids	33	8	7	6	6	5	5	3
St. Louis	22	8	7	6	6	7	8	6

classes in each of three cities. Cleveland secures the highest degree of uniformity and Grand Rapids the least. In the second grade Grand Rapids and St. Louis each represent a much higher degree of uniformity than does Cleveland. Above the second grade each of the cities represent about the same degree of uniformity. The difference in variation is sufficiently distinct, however, to rank Grand Rapids first as having least variation, St. Louis second, and Cleveland third.

An analysis of the results secured by St. Louis and Cleveland throw significant light upon the cause for difference in the level of achievement attained by different cities. As has already been stated, the oral reading scores are based on the number of seconds required to read each paragraph together with the number of errors made. Differences in achievement must, therefore, be attributed to differences in ability which pupils possess in one or both of these phases of reading ability. In order to study in an objective way the relative amount of achievement of each of the two cities in rate of reading and accuracy of pronunciation Table IV was prepared. The table compares the average number of seconds required by the pupils of St. Louis and Cleveland respectively to read each of three paragraphs of the test and in addition the average num-

ber of errors made are compared. The entries in the table may be read as follows: In reading Paragraph I, 223 pupils of Cleveland required on the average 35.13 seconds and made 1.84 errors per pupil, while 315 pupils of St. Louis required on the average 43.42 seconds to read Paragraph 1 and made 1.81 errors per pupil.

Before drawing any conclusions concerning the relative efficiency of these two cities in speed and accuracy of oral reading a word of explanation is necessary concerning the importance of these two factors. Rate in itself is a fair measure of the mastery which the reader has of the printed page. The poor reader is the one who is unable to pass readily from the printed symbol to its meaning and pronunciation. For the poor reader the mere mechanical processes are obstacles and he loses time in trying to perform the preliminary mental acts which are necessary before he can comprehend the meaning or pronounce the words. In the case of the good reader, on the other hand, the mechanics of the process are very fluent and rapid. The proficient reader has mastered the necessary associations and moves forward quickly and accurately. It is unnecessary to emphasize the importance of securing that type of improvement which is characterized by increase in rate and decrease in errors. Inasmuch as one pupil might read very slowly but accurately and a second pupil might read rapidly but inaccurately, it is necessary to include both rate and accuracy in any thoroughgoing study of achievement in the mechanics of oral reading.

Table IV reveals the fact that for Paragraph 1, 4, or 8 the rate of reading increases from grade to grade and the number of errors decreases. This general fact stands out with striking clearness. The difference in the achievement secured by the two cities is revealed by the relative emphasis given to rate and accuracy. A comparison of the achievement of Cleveland and St. Louis in Paragraph 1 shows that Cleveland's first-grade pupils read more rapidly than the pupils of St. Louis. Throughout the grades the superiority of Cleveland in rate is

maintained in general. St. Louis, on the other hand, secures a higher degree of accuracy in pronunciation in the first grade and maintains this superiority throughout the grades. This comparison gives evidence of a difference in emphasis in the two cities. An intimate study of the methods used in the two cities reveals differences in practice. Cleveland believes that pupils should learn to associate the sight of a symbol with its meaning very quickly and to this end makes extensive use of flash card exercises in the lower grades. St. Louis, on the other hand, places accuracy above speed and permits the pupil to read more slowly. This greater deliberateness on the part of St. Louis pupils is shown even more clearly when one passes from the records for Paragraph 1 to those for Paragraphs 4 and 8. The superior results secured by St. Louis in accuracy are commendable. The superiority of Cleveland in rate suggests the possibility that St. Louis might profit by Cleveland's example in the earlier grades. If accuracy of pronunciation could be maintained and at the same time rate increased, the general level of achievement in St. Louis could be noticeably increased. In discussing the results of classroom observations additional emphasis will be given to the recommendation that St. Louis give more attention to rate in the lower grades.

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TABLE IV
 AVERAGE RATE OF ORAL READING AND AVERAGE NUMBER OF
 ERRORS ON PARAGRAPH 1, PARAGRAPH 4, AND
 PARAGRAPH 8 FOR CLEVELAND SCHOOLS
 AND FOR ST. LOUIS SCHOOLS

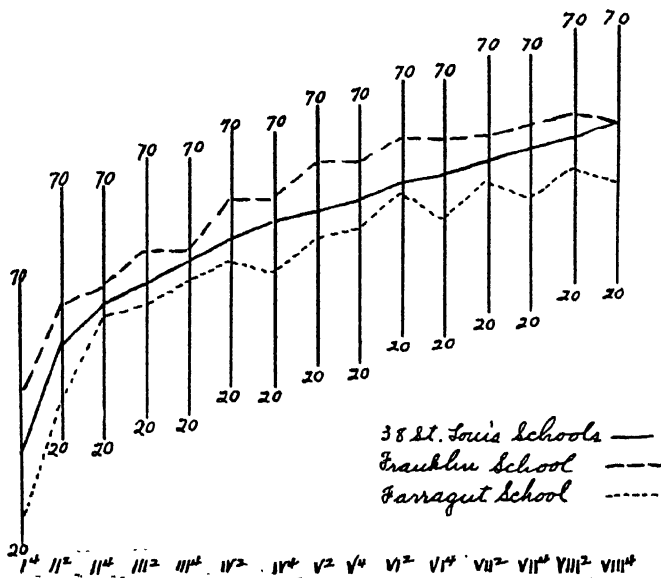
Grade	Cleveland			St. Louis		
	Number of Pupils	Number of Seconds	Number of Errors	Number of Pupils	Number of Seconds	Number of Errors
PARAGRAPH 1						
I	223	35.13	1.84	315	43.42	1.81
II	316	23.29	1.31	410	23.27	.77
III	328	17.78	.72	325	19.21	.57
IV	323	15.75	.65	281	15.62	.37
V	242	14.36	.64	17	16.17	.29
VI	216	13.59	.56	22	15.05	.18
VII	220	14.47	.44	20	15.15	.20
VIII	193	13.44	.41	20	16.10	.10
PARAGRAPH 4						
I	80	42.19	2.86	79	59.80	2.78
II	258	30.63	2.26	365	33.12	1.77
III	307	25.51	1.90	420	26.63	1.58
IV	312	22.15	1.84	430	21.83	1.16
V	231	19.98	1.71	407	21.15	1.11
VI	208	17.94	1.59	395	19.49	.94
VII	221	17.68	1.37	388	17.66	.93
VIII	193	16.62	1.24	413	17.85	.73
PARAGRAPH 8						
II	66	35.63	3.94	6	40.67	4.17
III	137	30.99	3.83	82	32.13	3.46
IV	229	26.01	3.00	256	29.72	2.99
V	196	23.32	2.42	333	27.57	2.10
VI	197	21.14	2.10	369	25.12	2.08
VII	215	21.32	1.90	378	21.88	1.40
VIII	188	19.26	1.49	411	21.14	.98

VARIATIONS AMONG SCHOOLS AND CLASSES IN ST. LOUIS

More significant for the improvement of instruction, however, is the comparison of the achievement of certain selected schools with the general average for St. Louis itself. In Diagram III the achievement of the Franklin School and of the Farragut School is each compared with the general average for St. Louis. The diagram shows that the Franklin School does very well in all grades. The achievement of the first grade is distinctly above the average and this superiority is maintained in general throughout the grades, but is particularly noticeable in the fifth and sixth grades. Farragut School, on the other hand, makes a poor start in the first grade and fails to rise to the general average at any point.

DIAGRAM III

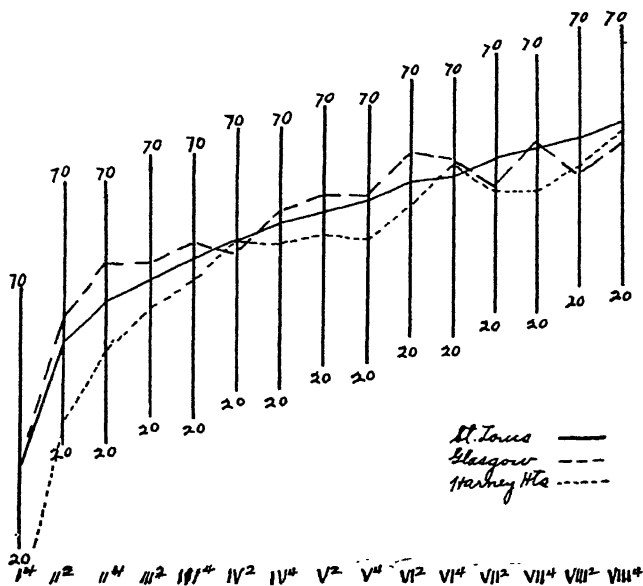
AVERAGE ORAL READING SCORES IN EACH GRADE IN ST. LOUIS
IN GENERAL AND IN TWO SELECTED SCHOOLS



In Diagrams IV and V Glasgow School, Harney Heights, Hodgen and Marshall are each compared with the general average for St. Louis. These diagrams show clearly the points of strength and weakness in the progress of the pupils from grade to grade. For illustration, the Glasgow School is strong in the lower grades and relatively weak in the seventh and eighth grades. Harney Heights is particularly weak in the lower grades and is relatively strong in the lower fourth and upper sixth grades. The fourth grade in the Hodgen School is weak and the sixth grade is strong. Furthermore, the diagrams reveal the fact that progress from grade to grade in some schools is irregular and not clearly defined.

DIAGRAM IV

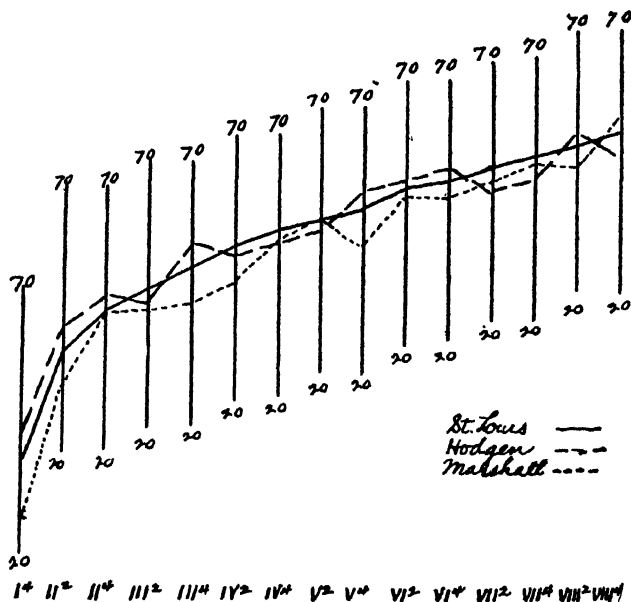
AVERAGE ORAL READING SCORES IN EACH GRADE IN ST. LOUIS
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Such internal comparisons within a system reveal the points of strength and weakness. They set up goals of attainment which serve as general guides to the teachers of the various grades. They reveal to the supervisor the points where advice and help may be needed and they reveal to the teacher the need for more concentrated effort on certain phases of classroom instruction. Clearer definitions of the results to be secured are required in all subjects at the present time. These standards are needed in each city and they can be worked out when teachers and supervisors alike come to a full recognition of the fact that a school system is properly organized only when its different units are working together for well recognized ends.

DIAGRAM V

AVERAGE ORAL READING SCORES IN EACH GRADE IN ST. LOUIS
IN GENERAL AND IN TWO SELECTED SCHOOLS



CAUSES OF VARIATION IN ACHIEVEMENT AMONG SCHOOLS AS
REVEALED BY THE OBJECTIVE STUDY OF READING

The causes which make for success and failure are of even greater significance than the fact that certain schools or classes made high or low scores. The data secured in connection with the reading tests were of such character that it was possible to determine the influence of certain factors.

A. Influence of Age on Oral Reading Achievement

It was pointed out in connection with Table I that the pupils of each grade varied widely in age. To determine the influence which age has on achievement, the average achievement of each age group in the fourth quarter sections of each grade was determined. The number of pupils in each of these groups is presented in Table V. The average oral reading score for each group is presented in Table VI. The table shows that the average scores for the age groups in the first grade decrease as one passes from the seven-year-old group to the eight and nine-year-old groups. A careful study of the more largely represented age groups in each grade shows the same decrease in achievement among the older pupils in a grade. This means that in those subjects which have been as highly formalized as oral reading bright pupils acquire the fundamentals quickly and surge ahead while the slower pupils in the class require more detailed help before an equal amount of progress has been attained. The pupil who learns quickly secures an advantage at the outset and easily maintains it throughout the elementary school. The teacher who teaches a class which varies widely in age is confronted with the problem of adapting instruction to meet the needs of pupils who learn with varying degrees of ease. It is evident in such a situation that the class as a whole cannot move forward as rapidly as if the class was composed entirely of pupils of normal age with like instructional needs.

TABLE V

AGE-GRADE PROGRESS TABLE FOR 5,118 ST. LOUIS PUPILS IN THE FOURTH QUARTER SECTIONS IN
TERMS OF THE NUMBER OF PUPILS IN EACH AGE GROUP

Grade.	6	7	8	9	10	11	12	13	14	15	16	17	18	Number
I....	192	349	93	17	4	...	...	...	...	...	...	...	...	655
II....	...	102	389	155	35	9	2	...	...	...	...	...	...	692
III....	83	333	172	62	15	5	...	...	...	...	...	671
IV....	7	77	272	174	84	29	9	2	1	...	...	656
V....	5	82	254	177	83	25	5	...	...	...	631
VI....	1	7	115	255	205	60	15	1	...	...	659
VII....	14	103	246	154	40	10	2	...	569
VIII....	2	24	140	223	142	50	4	1	586

TABLE VI

AGE-GRADE PROGRESS TABLE IN ORAL READING ACHIEVEMENT FOR 4,463 ST. LOUIS PUPILS IN
FOURTH QUARTER SECTIONS

Grade..	6	7	8	9	10	11	12	13	14	15	16	17	18	Average
I....	36	37	35	27	48	...	...	...	...	...	...	...	...	36
II....	...	50	48	46	42	42	54	...	...	...	...	...	...	47
III....	...	54	54	51	49	45	46	39	...	...	...	...	...	50
IV....	58	55	53	50	50	44	52	50	55	...	...	52
V....	64	56	53	51	50	51	55	...	...	...	52
VI....	60	57	55	53	53	50	54	44	...	...	53
VII....	58	54	52	50	50	46	47	...	52
VIII....	41	55	53	52	50	49	46	44	51

The table shows that in almost every grade there are a few of the oldest pupils who are equal in achievement to the brightest pupils in that grade. This may mean in a few cases that some of the oldest pupils are unnecessarily retarded. A comparison of the achievement of these oldest pupils in oral reading and in silent reading shows that in many cases the mechanics of reading have been sufficiently mastered but that ability to master the thought of the printed page is far below the average. Inability to read effectively to oneself necessarily means loss in standing in those subjects requiring individual study. In order to meet the needs of such pupils most effectively very little attention need be given to additional training in oral reading, but on the other hand, a very large amount of attention should be given to training them in the silent mastery of the printed page.

B. Influence of Sex

In connection with the Cleveland survey it was found that girls averaged higher in achievement in oral reading than boys. A similar study was made of the relative achievement of 5,118 boys and girls of St. Louis and the results are presented in Table VII. The table shows that in all grades after the first girls are superior on the average to boys. The amount of superiority is equal to the progress made in from one-fourth to one-third of a year. Although this difference is not large it emphasizes the fact that boys require a relatively larger amount of instruction in oral reading than do girls in order to secure equal amounts of achievement.

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TABLE VII

COMPARISON OF THE ACHIEVEMENT OF 5,118 BOYS AND GIRLS IN ORAL READING

Grade	Number of Pupils		Oral Reading Score	
	Boys	Girls	Boys	Girls
I	319	336	36.58	36.20
II	340	352	46.80	47.90
III	322	349	49.17	50.77
IV	309	346	51.00	52.60
V	310	321	51.51	53.38
VI	297	362	51.95	53.18
VII	275	294	51.10	52.20
VIII	261	325	50.63	51.14

C. Influence of Nationality

A study was made of the average achievement of various nationality groups through the first three grades. The language spoken in the home was made the basis of classification. In harmony with the results secured in Cleveland it was found that in the primary grades English and German speaking children represent average achievement. Jewish children rank above the average and Italian pupils rank distinctly below the average. With the exception of the German and Jewish children practically all foreign speaking children are seriously retarded by the language handicap. One of the difficulties which these foreign speaking children encounter is well illustrated by one boy who said when asked why he had so much difficulty, "The book doesn't say it as we say it at home." The present rule which requires that the same selections be read by each school during a given term doubtless works an injustice upon some of these pupils. Selections should be provided by the teachers which are simple in construction and phraseology and which will enable the pupil to develop gradually in the mastery of language forms as well as in the recognition of symbols.

D. Variations in Emphasis on Speed and Errors

It was pointed out earlier in this report that Cleveland and St. Louis differ widely in the relative emphasis which they give to speed and errors. Comparisons among schools within St. Louis reveal similar differences in practice. Table VIII presents the average rate of oral reading and the average number of errors on Paragraph 1 for twenty second-grade classes. The schools are arranged in the table in the order of increasing rate. In general, the number of errors decrease as the rate increases, but there are many noteworthy exceptions.

TABLE VIII

AVERAGE RATE OF ORAL READING AND AVERAGE NUMBER OF
ERRORS ON PARAGRAPH 1 FOR 20 SECOND-GRADE CLASSES

School	Rate	Errors
Oak Hill	31.0	1.00
Bates	28.8	1.05
Grant	26.7	1.25
Garfield	26.5	.50
Shaw	26.0	.95
Harney Heights	25.8	1.22
Washington	25.4	.80
Marshall	24.9	.80
Benton	24.2	.95
Webster	24.2	.75
Harrison	23.6	.60
Clinton	22.1	.75
Clark	21.8	.65
Hodgen	21.2	.90
Field	21.0	.75
Madison	19.9	.50
Riddick	19.7	.05
Glasgow	19.3	.40
Irving	17.3	.35
Shepard	17.1	.50

A comparison of the records of the pupils of the Grant, Garfield and Shaw Schools show that the average rate in each case is about 26 seconds, but the variation in the number of

errors is very great indeed. The Garfield, Madison and Shepard Schools show equal achievement in accuracy of pronunciation but vary somewhat widely in rate. These comparisons emphasize the necessity of a clear knowledge on the part of each teacher of the elements involved in a given subject and of the character of the progress which is being made along each line.

The significance of these differences in schools in rate and accuracy is made much clearer by a study of the individual records of the pupils of two schools. Table IX designates each pupil by a number and gives the rate and number of errors in each case. A study of the individual records of the Irving School shows that the pupils are well classified. They read

TABLE IX

RATE AND NUMBER OF ERRORS IN ORAL READING ON PARAGRAPH
1 FOR PUPILS IN THE SECOND-GRADE CLASSES OF THE
IRVING SCHOOL AND THE GRANT SCHOOL

Irving School			Grant School		
Pupil	Rate	Errors	Pupil	Rate	Errors
1	18	1	1	25	0
2	19	0	2	15	0
3	15	0	3	40	2
4	16	0	4	15	0
5	16	1	5	40	2
6	19	0	6	15	0
7	14	0	7	30	0
8	20	0	8	18	0
9	14	2	9	26	0
10	18	0	10	52	4
11	15	0	11	35	5
12	13	0	12	28	2
13	17	0	13	15	1
14	19	0	14	20	3
15	19	0	15	18	2
16	16	0	16	18	0
17	20	1	17	65	4
18	14	1	18	15	0
19	20	0	19	15	0
20	23	1	20	28	0
Average	17.3	0.35		26.7	1.25

at a fairly uniform rate and make but very few errors. The pupils of the Grant School, on the other hand, vary in rate from 15 to 65 seconds, and they vary in accuracy from no errors to 5 errors. It is unnecessary to emphasize in detail the difference in the instructional needs of the two classes. In the Grant School pupils 5, 10, 11, 14, and 17, represent a group whose needs are entirely different from those of pupils 1, 2, 4, 6, 8, 13, 16, 18 and 19. In order to make rapid progress the group of slower pupils mentioned above needs a special type of training which differs radically from the type of training for which the more advanced group is prepared. It is unjust to both groups to subject them to the same type of instruction. This study emphasizes the point of view which has been developing so rapidly during the last few years that each teacher should adopt some device in connection with her classroom instruction which will enable her to locate individual needs and to give proper emphasis to various phases of instruction. Until teachers adopt this critical, inquiring attitude toward their work progress toward the elimination of inconsistencies and wrong emphasis in instruction will be slow.

CAUSES OF VARIATION IN PROGRESS AS DETERMINED BY CLASSROOM OBSERVATIONS

The results of the oral reading tests showed that classes varied widely in achievement. An analysis of the data reveals certain possible explanations for some of these variations. Additional explanations for differences in achievement among classes were secured through classroom observations.

One outstanding difference between the instruction of primary classes relates to the relative emphasis which is given to the thought of the selection and to the mechanics of reading. It is commonly agreed that the problem of first-grade reading is to develop a mastery of the fundamentals. In some cases this result is obtained by concentrating attention upon the

mechanics of reading. In other cases the mechanics of reading are mastered incidental to the mastery of the thought. It is evident that of two schools the one which masters the mechanics as it is developing in its power to interpret the printed page will rank superior in general reading ability to the school which masters the mechanics alone.

The general point of view maintained by first-grade teachers in St. Louis is well illustrated by the following quotation taken from a recent report by the subcommittee on reading.

"Reading is primarily a thought process, and the first aim in teaching it should be to enable the child to get the thought from written or printed symbols accurately and readily. From the very beginning reading should be done only for the sake of getting meaning. The habits formed in the first reading experiences and the set of the mind toward the acts and purpose of reading must be right from the start. Consequently any methods that lay the initial stress on reading as word calling are to be avoided not only as wasteful but as offering a situation out of which it is impossible to evoke the desired response."

The extent to which first-grade classes secure the results outlined above varies widely. Classroom observations revealed the fact that differences in the character of the reading material used accompanied differences in the results secured by teachers.

A very large proportion of the teachers depend from the first upon lessons contained in the prescribed readers. Of these teachers many have the unusual ability of attaching interest to the study of each story in the book. Such teachers are able to secure effective results with even the most formal selections. Very frequently, however, recitations were observed in which uninteresting selections were taught by the most formal methods. The recitations were begun by asking the first pupil to read one line and the second pupil the next. It is unnecessary to emphasize the fact that such methods em-

played in connection with uninteresting selections rarely secured effective effort on the part of pupils.

The supervisors of St. Louis have recognized the limitations of many of these reading exercises, and they have urged teachers in the first grade to rely more on their own resources and to supply through blackboard exercises and other means the type of material which will arouse the pupils' interest and secure effective effort.

Many teachers have profited by this recommendation and have enriched the content of their reading material in a variety of ways. In a number of schools teachers use leaflets which have been printed for their special use. One teacher used a leaflet entitled "Our Grocer." The amount of interest which the pupils displayed, the eagerness with which they read, and the amount of constructive thinking displayed by the pupils during the exercise served as strong recommendations in favor of reading selections which make a direct appeal to the interests of the pupils. In other schools objective materials from the museum were made the basis of the reading lesson. One teacher placed a mounted bluebird before the class and the reading lesson grew out of carefully directed discussions concerning the bird. The superior results secured through the use of these carefully selected exercises, as contrasted with the results secured through the use of some of the stereotyped reading selections, justify the recommendation that a widespread movement be initiated by teachers to introduce materials which appeal more directly to the interests of pupils and which lend themselves, because of their more vital content, to effective presentation.

A second difference in the results secured by teachers was shown in the power which different groups of pupils manifested in attacking new words. This difference in the ability of the pupils was usually accompanied by the fact that teachers differed very decidedly in their ability to impose responsibility, to give effective help, and to develop independence over the mechanics of reading without attracting the pupils'

attention from the thought of the selection. Many teachers had at their command a list of simple devices such as recalling words previously studied, dividing words into syllables on the blackboard, referring to a word which rhymes with the difficult word, asking the pupils to notice significant parts of the word, etc. Difficulties were met quickly and effectively, the teacher making a note of the difficulty and bringing it up later in the word-study class. Other teachers seemed to have few or no effective devices at their command by means of which to help pupils. In many such cases pupils were permitted to study thirty or more seconds on a word before it was finally pronounced by the teacher. In the meantime the pupil had lost the thread of the story and the reading exercise became a slow, uninteresting procedure. It was under the influence of the type of instruction just described that pupils stumbled along in their reading, grouped the words poorly and evidenced little appreciation of the thought of the selection. First-grade teachers who are satisfied with the results just described seriously complicate the problem of teaching reading in the more advanced grades.

SECOND AND THIRD GRADE READING

Oral reading in the second and third grades of St. Louis is quantitative in character. Many recitations are spent in reading page after page with little comment or discussion. Such exercises are calculated to increase a pupil's reading vocabulary and to make the associations between symbol, meaning and pronunciation more permanent and effective. In order to give detailed attention to the development of various phases of reading ability many teachers have "literary" reading in the morning and "sight" reading in the afternoon. The purpose of the morning recitation is to make a careful study of the selection, to discuss various problems which arise in connection with it, and to aid the pupils on such problems as pronunciation, grouping, clear expression, etc. The recitation of the

afternoon centers about some interesting story in a supplementary reader. This reading is done at sight and proceeds with little interruption. Whenever the pupil encounters a difficult word, it is pronounced by the teacher, or by some member of the class, and the reading continues. The chief purpose of the hour is to read and enjoy the story. In response to inquiries the teachers stated that they chose sight reading exercises which were noticeably easier than the selections studied in the morning. The reasons offered for choosing easier selections were that the pupils learned to group words much more effectively when they were relieved of the necessity of working out new pronunciations, their expression was improved and much keener interest was developed in reading.

In contrast with the procedure just described several classrooms were visited in which no differentiation occurred between the work of the morning and the afternoon. In each period a detailed study was made of a difficult selection with the result that individual members of the class rarely read more than eight or ten lines. More time was spent in talking about the selection than in reading it and more time was devoted to preparing for new difficulties than in thoroughly mastering old ones. As a result the pupils read very slowly; they failed to group words effectively, and they did not display that ease and facility in their reading which was attained by those who read frequently and at length. The contrast in the results secured by the two methods was so evident that we are justified in urging those teachers who do not have quantitative reading exercises frequently to make a careful study of the plan at once. Particularly in the case of teachers whose pupils read haltingly and with little expression it is urged that quantitative reading of simple selections be adopted until this weakness has been overcome.

Furthermore, it was observed that differences in achievement were frequently correlated with differences in the quantity and quality of the supplementary reading material which was sup-

plied to the pupils. In many schools pupils in the second and third grades read at least one book a week outside of school hours. In other schools no such provision can be made, and the lower achievement on the part of these pupils was clearly displayed during the reading period and in the tests.

Supplementary reading material is supplied to the pupils of St. Louis through various channels. The Board of Education supplies a limited number of sets of supplementary readers, but this list is very limited as compared with the lists of other cities which have been studied. During recent years the Board of Education has depended to a considerable extent on the public libraries for help along this line. The public libraries are very generous in supplying books to the school. One teacher reported that she was able to secure fifty books each week. Teachers in other schools, however, complained because they were unable to secure the kind and number of books desired. Furthermore, the libraries cannot always supply the books which are requested and they are compelled to make substitutions, some of which are appropriate and some of which are not. In a few schools the principals endeavor to meet the situation by building up a library within the school. The report on the curriculum has already emphasized the need for an enlarged and enriched supply of supplementary reading books. This need is emphasized again in this report because of the influence which appropriate reading material has on the results of reading instruction. It is earnestly recommended that the Board of Education take steps in the very near future to place at the disposal of the teachers a more adequate supply of reading material.

INTERMEDIATE GRADE READING

Reading in the intermediate grades is largely oral. Considerable attention is given to silent reading, however, and the character of this work will be commented on later. In contrast with the work done in the lower grades the oral

s involve more discussion and are distinctly
In the intermediate grades many recitations
which were very interesting, which resulted in
lively discussions, and which were accompanied by effective
oral reading. One class was studying "How Duke William
Became a King." A number of important topics which re-
lated to earlier parts of the selection had been worked out in
previous recitations, and they were listed on the board. The
recitation was opened by a review of these points. Following
this review the pupils suggested different topics appropriate
for the first two paragraphs. Some of the topics selected
were "Marching to Fight," "Stanford Ridge," "The New
Foes," "Giving Orders," and "Waiting for the Normans."
The class finally agreed that "Meeting the New Foes" was
probably the most appropriate topic. One of the members
of the class read the selection orally in order to determine the
appropriateness of the selected topic. The reading was very
well done. The pupils were attentive because they had a
definite problem before them. The discussion which followed
was vigorous and pointed. The recitation proceeded rapidly
from one point to the next because the pupils had made
careful preparation with a series of interesting problems in
mind. The effectiveness of the reading by these pupils showed
that their instruction had been consistent and thorough.

Some of the poorest results were secured by teachers who
had no clearly defined purpose in teaching the lesson. These
teachers evidently had made no preparation for the work of
the hour. Errors were made and corrected. A few sugges-
tions were offered concerning the thought of the selection.
Whatever comments were made came to the teacher's mind
at the time they were given. It is needless to say that recita-
tions conducted in this way fail to give positive instruction.
Some selections should be read because they are entertaining
or amusing, some because they instruct, and still others be-
cause they develop ability on the part of pupils to discriminate
between essentials and non-essentials, or because they develop

ability to weigh values and to select the important points. The methods employed by the teacher should vary according to the purpose of the lesson. Unless a teacher makes definite preparation before the reading lesson begins it is almost certain to follow that she will not appreciate the most significant points of the lesson, and she will, therefore, not be able to direct the thought of the pupils along the most profitable lines.

A second difference which was noticeable between the work of the better and poorer schools relates to the purpose or motive which stimulated the oral reading. In some of the classes which secured the most effective results audience reading was carried on frequently. During such recitations three or four members of the class read an interesting story to the pupils. These pupils made previous preparation for their part in the class exercise. They had a real purpose in reading to the class, and they met their responsibility in a way which brought forth productive results. In other cases pupils brought selections to school which they had read at home and they read these stories to their classmates. In connection with the work of some classes portions of selections had been memorized and were rendered by pupils in connection with the dramatization of a story. By varied devices similar to those just mentioned many teachers secure splendid results in developing good oral expression. It seems reasonable to assume that the pupil who puts forth his best effort in a thorough preparation of one selection which he will read with a real purpose will make more progress than the pupil who reads uninteresting material to pupils who have already read the same passages several times.

The following method illustrates the procedure in one of the classes which secured particularly poor results. The lesson was introduced by asking for the name of the story. The pupils then read the first paragraph to themselves. The teacher asked the following questions: "What is meant by conquest?" "What is an event?" The paragraph was then read aloud. Three errors were corrected. The pupils then

read the second paragraph silently. Several other disconnected questions were asked. The pupils read the second paragraph orally and were severely criticized by the teacher. This method was followed throughout the recitation. At no time was there any evidence of interest on the part of the pupils. Nothing was done to stimulate good thinking. The pupils were inattentive and their reading was poorly done. Wherever such conditions exist there is need for a thoroughgoing revision of the methods of teaching reading.

SEVENTH AND EIGHTH GRADE READING

Reading in the upper grades is again largely oral. This point of view will be criticized in connection with the discussion of silent reading. The usual practice is to study somewhat longer selections than in the intermediate grades, accompanied by a large amount of discussion and by more or less oral reading. Many teachers have developed methods which secure effective results. In one class a careful study was made of the selection entitled "Knights of the Round Table." The pupils had made a preliminary study of the selection and were discussing it in class under the direction of well selected questions by the teacher. The discussion showed that the pupils had mastered the essential points of the lesson. The questions were broad in character and called for a large amount of reflective thinking. The pupils had been trained to check the reports made by different members of the class in such a way that high grade thinking characterized the entire recitation. Certain parts of the selection had been memorized. The pupils gave a dramatization of some of the more interesting parts. The details of the dramatization had been planned by the pupils. Armor, crowns, and various articles of wearing apparel had been fashioned by them. Each pupil knew his part well and was very earnest in his presentation of it. From the standpoint of the results secured this recitation is typical of many which were observed. Such recitations secure

effective results not only because of the large amount of thinking which they provoke, but also because of the permanent interest which they attach to the study of some of our better literary selections.

A few of the recitations which proved ineffective were conducted in the following manner: One recitation began by asking the pupils to pronounce the words at the top of the page. The teacher then asked the pupils to correct any mispronunciations which they had noted. An intensive study was then made of the meaning of a long list of words. The words were new and difficult for the class, and this preliminary word-study period resolved itself into a painful process of extracting meanings. Two-thirds of the recitation period was spent in this way. When the reading exercise itself began, the discussion and the reading were just as formal as the word study had been. Very little interest was evidenced by the pupils, and a sigh of relief accompanied the close of the recitation. A second recitation which failed to secure effective results was conducted in the following way: The teacher began by asking for reports concerning the author of the selection. Several questions, such as the following, were asked: "Who was Thackeray?" "When did he live?" "Who was the English author living at the same time?" "Who was the rival of Thackeray?" The pupils then began reading without any reference to the content of the selection and with no problems in mind which they were to work out during the recitation period. The reading was ineffective both from the standpoint of pronunciation and expression. Throughout the recitation the teacher quizzed the pupils concerning certain minor points in the selection. The pupils did not have an adequate background of historical fact concerning the points in question, and consequently the time devoted to the questions was practically wasted.

Oral reading exercises in the upper grades are legitimate. If they are productive, they must be conducted along effective lines. St. Louis has a large number of very skillful teachers

of reading. Their spirit, enthusiasm, methods, and results should be carefully studied by those teachers who are less skillful and who secure inferior results.

SUMMARY OF THE RESULTS SECURED THROUGH THE STUDY OF ORAL READING

The results of the oral reading investigation show that on the whole St. Louis attains a high level of achievement. Whatever criticism has been offered concerning the results secured has been directed at individual schools. The amount of variation in a given grade among the various schools compares favorably with the amount of variation among schools in Cleveland and Grand Rapids. A comparison of the rate and accuracy with which the pupils of St. Louis and Cleveland read shows that different points of view are followed in the two cities, Cleveland endeavoring to secure rapid association through the extensive use of flashcard exercises in the lower grades, while St. Louis encourages greater deliberateness and a higher degree of accuracy in reading.

A comparison of the records of individual schools with the average for St. Louis shows very wide differences in the character of the progress from grade to grade. An analysis of the available facts show that in general the older pupils in the class make lower scores than the younger pupils. Boys make lower scores on the average than girls, and pupils who use a foreign language in their homes are usually less effective readers than pupils who speak the English language. Jewish children form a notable exception to this general rule. The relative amount of emphasis given to speed and accuracy in oral reading differs widely among schools and leads in many cases to higher or lower scores.

Classroom observations reveal the fact that differences in the achievement of pupils are due in part to the character of the reading selections which are used in various classes. There

is pressing need for more interesting selections in the first grade and for an enriched and enlarged supply of supplementary readers in all grades. Furthermore, differences in achievement are due in part to the differences in teaching power displayed by teachers. These differences were very evident in the lower grades in connection with the skill displayed by the teacher in directing attention to the thought of the selection and in connection with the teacher's ability to develop independence on the part of the pupil in attacking new words. In the intermediate grades very wide differences were noted in the motive which prompted the reading and in the thoroughness with which the teacher prepared for the recitation. In the upper grades poor results in reading achievement were usually accompanied by formal, uninteresting methods which failed to stimulate effective effort on the pupils' part. These differences in method suggest the advisability of the organization of a series of conferences in which problems relating to effective methods of teaching reading can be discussed, and in which the more skillful teachers can describe and demonstrate the methods which they use in securing effective results.

B. Tests in Silent Reading

At the time that the pupils were tested in oral reading, other reading tests were given to determine how rapidly pupils read silently and to what extent they understand what is read. The tests were given to 10,549 pupils chosen from 546 classes. These classes were equally distributed among the grades from the second to the eighth, inclusive. The following report is based on the records of 8,928 pupils representing the second and fourth quarters of the various grades.

The material used in the tests consisted of three short selections each less than 300 words in length. These selections formed a series increasing in difficulty, the first of which was

given to the pupils in the second and third grades; the second to pupils in the fourth, fifth and sixth grades, and the third to pupils in the seventh and eighth grades.

The following paragraphs form respectively the first paragraph of each of the three selections and give an idea of the character of the material used in the tests:

“Tiny Tad.”

“Tiny Tad was a queer little fellow with only two legs and a short tail. He was nearly black, too, and much smaller than most tadpoles in the big pond. He could hardly wait for his front legs to grow.”

“The Grasshoppers.”

“The grasshoppers were among the worst enemies of the early settlers of Nebraska. Their homes were on the high plains and among the hills at the foot of the great mountains in the West. Here they lived and raised their families.”

“Ancient Ships.”

“There is no more interesting study to marine architects than that of the growth of modern ships from the earliest form. Ancient ships of war and of commerce equally interest them; but as they study the sculptures and writings of the ancients, they find the records of warships far outnumbering ships of commerce.”

Each of these selections was printed on a separate card in three columns. The middle column of the easiest selection contained exactly 100 words, and the corresponding column in each of the other cases contained exactly 200 words. This device in printing enabled the one giving the test to record

the exact time required to read one or two hundred words, as the case might be.

In administering the test the following directions were given to the pupil: "Read the story on this card to yourself. Read it from beginning to end without stopping or repeating any of it. Read the story rapidly but carefully. Read the difficult words as best you can and go on without asking about them. Be ready to tell the story or answer any question about it when you are through. Do you understand?"

While the pupil read, the teacher giving the test noted and recorded the number of seconds required to read the second column of the selection. When the pupil had finished reading, he was given a sheet of paper upon which to write all he could remember of what he had read. After the pupil had completed the written reproduction he wrote the answers to ten specific questions in regard to the selection. Below the fourth grade the teacher giving the test wrote the reproduction and answers to the questions as the pupil dictated.

RATE OF SILENT READING TESTS

The average rate at which a class reads silently was determined by finding the average number of seconds required by the class to read 100 words. This result was then expressed in terms of the number of words read per second. The average rate at which each class read is shown in Table X. The average rate for each grade is indicated at the foot of the table. The average rate by grades was found by determining the average number of seconds required by all the pupils of a given grade to read 100 words. This result was then expressed in terms of the number of words read per second.

The rate at which pupils of St. Louis read is compared with the rate at which pupils of other cities read in Diagram VI. Since three selections were used in the silent reading test, a readjustment has been necessary in the diagram. The points

TABLE X
AVERAGE RATES IN SILENT READING FOR THE SECOND AND FOURTH SECTIONS IN GRADES II-VIII,
INCLUSIVE, IN 35 SCHOOLS

Schools	II		III		IV		V		VI		VII		VIII	
	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Ames	1.4	1.6	1.8	2.6	2.6	2.4	2.5	3.7	4.7	5.2	2.4	2.5	2.8	3.4
Bates . . . . .	.9	1.1	1.6	1.8	2.1	3.4	2.2	3.3	2.8	2.8	2.3	3.5	2.4	2.9
Bryan Hill	1.0	1.2	2.1	2.1	2.7	2.8	3.1	3.1	2.3	2.6	2.3	2.7	2.7	2.2
Clinton	1.2	1.8	2.2	2.1	1.2	2.3	2.7	3.1	2.7	3.1	2.6	2.5	3.6	3.6
Columbia	1.3	1.4	2.3	2.2	2.2	2.0	2.5	2.7	3.2	2.7	2.6	2.8	...	2.9
Divoll	1.6	2.0	2.3	3.1	4.6	3.0	2.6	3.4	3.0	3.4	3.2	3.0	2.0	2.5
Fanning	1.2	1.1	1.9	2.5	2.2	2.3	2.2	2.2	2.5	2.5	2.3	2.6	2.4	2.4
Farragut . . . . .	.9	1.7	1.9	2.3	2.1	1.8	2.0	2.2	3.0	2.9	3.0	3.4	3.0	3.2
Field	1.2	1.8	2.4	2.7	2.5	2.6	2.6	3.7	3.7	4.4	3.4	3.2	3.5	3.4
Franklin	1.6	2.2	2.3	2.2	2.8	2.5	2.9	2.9	3.0	2.8	3.0	...	3.1	3.7
Fremont . . . . .	.9	1.4	1.7	1.7	2.2	3.4	3.7	2.5	...	2.7	2.7	2.9	2.9	2.9
Freebel	1.1	1.8	2.0	2.5	...	...	2.4	3.2	3.2	2.4	...	...	...	...
Garfield	1.1	1.4	2.2	2.2	2.0	2.3	1.7	2.6	3.3	3.3	2.9	3.2	3.7	3.5
Glasgow	1.1	1.9	2.3	2.7	2.3	3.1	3.0	3.0	3.3	3.6	2.3	2.5	2.3	2.1
Grant	1.1	1.5	2.2	2.2	2.3	2.7	2.6	2.7	3.1	3.2	3.2	2.5	2.8	3.3
Harney Hts.	1.2	1.5	1.6	2.3	2.8	2.8	2.4	2.5	2.7	3.0	2.8	2.9	3.2	1.7
Harrison	1.6	1.7	2.1	2.9	.9	2.2	3.0	2.8	3.1	...	...	2.9	2.9	3.0
Henry	1.1	1.6	2.0	2.7	2.8	3.0	2.9	...	...	3.6	3.1	4.0	4.8	4.6
Hodgen	1.2	2.1	2.0	2.7	2.3	2.7	3.0	2.6	...	3.3	3.0	2.8	2.8	2.7
Irving	1.3	2.0	2.8	2.8	3.0	2.0	2.9	3.1	...	3.8	3.0	3.3	3.3	3.4

TABLE X—Continued

AVERAGE RATES IN SILENT READING FOR THE SECOND AND FOURTH SECTIONS IN GRADES II-VIII,
INCLUSIVE, IN 35 SCHOOLS

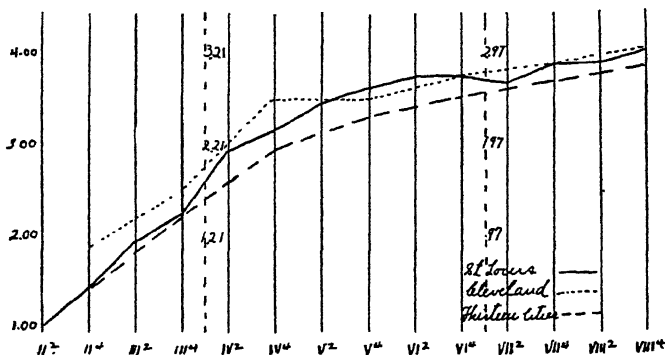
Schools	II		III		IV		V		VI		VII		VIII	
	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Jackson	1.3	1.8	2.2	2.2	1.9	3.1	3.2	2.8	3.1	3.0	2.9	2.6	...	3.5
Laclede . . . . .	.6	1.8	2.0	3.2	4.5	2.4	3.0	2.6	...	3.5	3.7	3.5	4.4	3.5
Lafayette	1.6	2.0	2.4	2.5	2.7	2.4	2.5	2.2	2.9	2.0	2.3	3.4	...	...
Longfellow	1.1	1.3	1.9	1.9	2.9	2.3	3.7	3.4	...	3.8	4.0	...	3.3	2.5
Madison	1.2	1.9	2.5	2.3	3.0	1.6	2.2	3.1	3.1	...	2.6	2.4	3.3	3.2
Mann . . . . .	.9	1.9	2.3	2.2	...	2.8	2.9	3.7	3.4	2.9	2.9	3.1	3.1	3.4
Marshall	1.1	1.9	2.0	2.1	...	2.4	2.3	2.3	3.0	2.2	...	3.2	3.2	3.0
Oak Hill	1.2	1.2	1.5	2.1	1.6	1.7	2.8	3.0	3.2	3.1	2.7	3.0	2.7	3.4
Pestalozzi	1.2	2.0	2.2	...	2.0	2.6	3.0	2.9	2.7	2.4	...	...	...	...
Riddick . . . . .	.9	2.1	2.0	2.3	2.1	2.9	3.4	2.8	2.8	3.6	3.2	2.9	2.0	2.4
Shaw	1.3	1.6	1.8	2.9	2.5	1.8	2.5	...	2.7	2.4	2.5	2.9	3.0	3.0
Shepard	1.4	2.4	2.3	2.2	2.7	3.5	2.9	3.4	...	3.4	...	...	2.7	3.2
Washington	1.0	1.3	2.0	1.9	2.4	2.4	2.8	3.0	...	3.4	2.6	3.5	3.3	3.5
Webster	1.0	1.7	2.2	2.2	2.6	2.6	2.6	2.4	2.6	3.6	2.6	3.0	2.5	...
Wyman	1.6	1.5	1.8	2.1	2.0	2.5	2.4	3.2	3.0	2.9	2.7	2.3	3.2	3.4
Average	1.1	1.5	2.0	2.3	2.2	2.4	2.7	2.9	3.0	3.0	2.7	2.9	2.9	3.0

of this readjustment are between the third and fourth grades and between the sixth and seventh grades. In Diagram VI dotted vertical lines are drawn at each of these points. The numbers at the left of the diagram indicate the numbers of words read per second in the easy selection. The numbers on the line between the third and fourth grades indicate the equivalent numbers of words read per second when the second, more difficult passage was used, and the numbers on the line between the sixth and seventh grades indicate the equivalent number of words read per second when the most difficult passage was used.

The diagram shows that the rate at which the pupils in St. Louis read is somewhat similar to the rate at which the pupils in Cleveland and thirteen other cities read. Above the third grade St. Louis maintains an average higher than the general average of thirteen cities, but it does not equal the Cleveland record excepting in the upper fifth and lower sixth grades. Such a comparison might result in a feeling of considerable satisfaction on the part of St. Louis schools were it not for the

DIAGRAM VI

AVERAGE RATES IN SILENT READING FOR 8,928 ST. LOUIS PUPILS, FOR 1,831 CLEVELAND PUPILS AND FOR 2,654 PUPILS OF THIRTEEN CITIES



The situation in the Fanning School presents a different type of problem. The records for the earlier grades compare favorably with the average for the city. Hence it is fair to assume that the relative decline in the achievement of the intermediate and upper grades is not inherent in the character of the school population. The teachers of a school whose record is similar to that of the Fanning School should initiate a co-operative investigation to determine the cause for the decline in the intermediate grades. It may be due to the fact that so much time is devoted to oral reading that little time has been left to develop habits of rapid, effective silent reading. Table II shows that the Fanning School has a relatively high record in oral reading in the intermediate and upper grades. Furthermore, it is possible that the teachers in these grades believe that the best results can be secured by emphasizing careful reading rather than rapid reading. Evidence for this suggested explanation is found in the fact that the quality scores for the Fanning School are above the average in the intermediate and grammar grades.

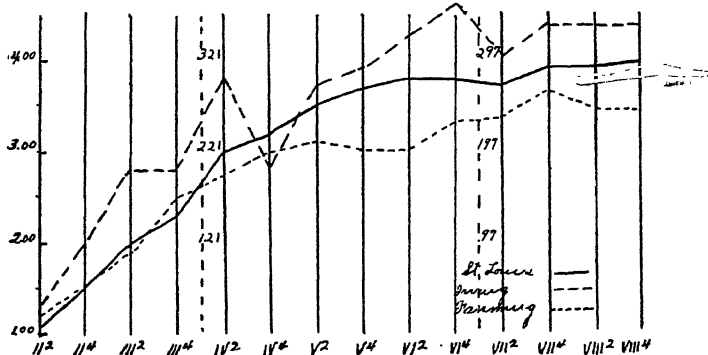
As a final suggestion in determining the cause of low achievement in any line of endeavor teachers should always ask themselves whether or not they possess that type of teaching technique which will produce the desired results. The results secured by the Fanning School are typical of those secured in a great number of schools. They have been discussed at length in connection with this school to emphasize the fact that a school must always be seeking to determine its sources of strength and weakness and to determine the character of the constructive endeavor which is necessary to secure improvement.

The contrast between the Oak Hill School and the Lafayette School in Diagram VIII gives additional emphasis to the point of view just presented. Oak Hill makes a splendid record in the lower grades but decreases very decidedly in relative efficiency in the intermediate grades. The Lafayette School, on the other hand, secures relatively poor results in the lower

grades but makes marked improvement in the intermediate grades. It is evident that the character of the instruction in the fifth and sixth grades of these two schools is radically different.

DIAGRAM VIII

AVERAGE RATES IN SILENT READING IN ST. LOUIS SCHOOLS IN GENERAL AND IN TWO SELECTED SCHOOLS—
OAK HILL AND LAFAYETTE



Expert supervision and teaching should carry investigation far enough to determine the causes for these apparent differences.

QUALITY OF SILENT READING

The scores for quality of silent reading are based on the ability of a pupil to reproduce what was read and to answer specific questions concerning the subject-matter of the test. These methods of testing comprehension have been adopted because they represent two of the most frequent ways in which pupils are tested in the average classroom. To determine the quality of the pupils' reading the reproductions and answers to questions were checked as follows: All wrong statements and repetitions were checked from the pupils' reproduction and the remaining words counted. The percentage that these words formed of the entire selection was adopted as the reproduction score. For each question answered correctly a grade

of ten points was given. The average of the reproduction grade and the grade received for correct answers to questions was then found. This average grade is adopted as the quality score for silent reading throughout this investigation.

The average quality score for each class tested in St. Louis is given in Table XI. The average scores for each grade appear at the foot of the table. The average score for a given grade is determined by finding the average of the scores of all the pupils of that grade.

The average quality scores for St. Louis, Cleveland and thirteen other cities are compared in Diagram IX. Readjustments appear in this diagram similar to those described in connection with the diagrams for rate of silent reading. The diagram reveals one of the most interesting and significant facts which this portion of the report has to present. It will be remembered that Diagram VI showed that Cleveland and St. Louis each attained a level of achievement in rate of silent reading above the general average for thirteen cities. This diagram shows that St. Louis attains a level of achievement in quality of silent reading which is distinctly above the average for thirteen cities, while Cleveland, on the other hand, has a level of achievement which is as distinctly and uniformly below the average. This comparison is impressive. We are here comparing two cities, each of which reaches a high level in rate. One maintains a high level in quality and the other falls distinctly below the general average. It is evident that the emphasis given to the silent mastery of the printed page in these two cities differs very widely. The value of inter-city comparisons is enhanced greatly by the revelation of such differences in emphasis. In connection with the Cleveland survey it was shown that the formal aspects of reading were given great emphasis while the thought side received relatively less emphasis. It will be shown in the further discussion of the St. Louis results that St. Louis not only emphasizes the formal aspects of reading, but in addition devotes a relatively large amount of attention to the thoughtful mastery of the printed page.

TABLE XI
AVERAGE QUALITY SCORES IN SILENT READING FOR THE SECOND AND FOURTH SECTIONS IN
GRADES II-VIII, INCLUSIVE, IN 35 SCHOOLS

Schools	II		III		IV		V		VI		VII		VIII	
	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Ames	37	43	39	47	35	55	41	61	48	62	56	32	30	46
Bates	19	26	32	41	21	51	40	45	40	30	27	33	27	25
Bryan Hill . . .	35	43	50	51	27	41	48	52	38	36	21	28	47	38
Clinton	28	36	54	43	22	32	29	37	35	48	34	32	29	29
Columbia	59	47	37	45	34	26	35	38	40	43	23	28	..	24
Divoll	40	30	30	36	44	55	52	37	37	57	23	50	47	30
Fanning	31	36	43	56	31	33	53	42	45	46	29	31	37	43
Farragut	20	38	36	37	24	31	40	33	41	47	24	41	30	29
Field	30	40	51	45	29	26	26	31	35	37	31	25	29	27
Franklin	31	41	34	44	26	35	38	35	52	57	31	..	39	39
Fremont	19	29	37	46	24	31	58	45	..	44	24	39	48	50
Frebel	28	49	48	37	..	..	34	39	41	41	..	..	..	..
Garfield	24	33	41	45	29	23	32	27	37	36	27	35	25	23
Glasgow	28	37	44	42	24	34	27	25	28	29	23	31	22	28
Grant	31	30	40	38	36	40	34	41	38	56	23	31	25	32
Harney Hts. . . .	21	30	35	36	26	32	36	30	39	45	20	23	26	33
Harrison	30	49	49	66	29	34	24	33	45	..	..	25	31	25
Henry	17	31	36	61	19	27	38	..	..	36	..	27	26	29
Hodgen	36	53	47	52	24	32	40	47	45	39	30	28	36	33
Irving	32	40	38	51	46	27	34	45	..	48	26	34	42	50

TABLE XI—Continued
 AVERAGE QUALITY SCORES IN SILENT READING FOR THE SECOND AND FOURTH SECTIONS IN
 GRADES II-VIII, INCLUSIVE, IN 35 SCHOOLS

Schools	II		III		IV		V		VI		VII		VIII	
	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Jackson	23	44	38	55	27	39	27	39	47	42	26	38	..	25
Laclede	17	33	38	40	36	28	28	36	..	46	21	19	16	21
Lafayette	19	43	43	50	22	35	26	33	35	61	25	19	..	..
Longfellow . . .	28	42	49	58	44	46	60	60	..	51	54	..	39	48
Madison	21	33	38	37	26	25	35	31	31	..	36	27	39	36
Mann	30	43	48	51	..	23	32	29	30	36	17	27	30	38
Marshall	21	30	32	38	..	28	29	31	47	33	..	26	30	30
Oak Hill	23	27	36	42	24	25	30	24	34	38	16	20	28	33
Pestalozzi	31	41	37	..	19	28	25	36	41	38	..	..	..	..
Riddick	19	36	45	39	34	36	42	31	41	45	24	22	35	31
Shaw	23	38	39	46	38	32	38	..	46	42	37	44	57	57
Shepard	34	46	52	48	50	34	27	36	..	35	..	..	22	29
Washington . . .	27	42	39	42	20	27	30	36	..	33	27	25	22	36
Webster	36	31	44	43	57	44	46	60	34	54	33	23	33	..
Wyman	25	29	45	38	31	28	35	45	37	41	29	30	34	25
Average	27	37	41	45	31	34	36	38	40	44	28	30	33	34

DIAGRAM IX

AVERAGE QUALITY SCORES IN SILENT READING FOR 8,928 ST. LOUIS PUPILS, FOR 1,831 CLEVELAND PUPILS AND FOR 2,654 PUPILS OF THIRTEEN CITIES

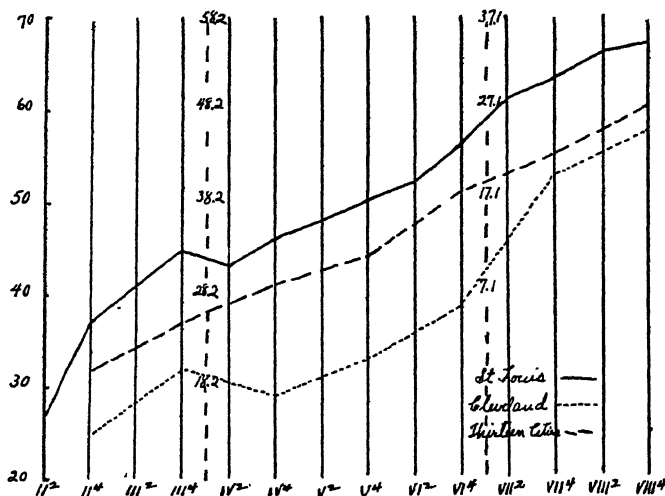
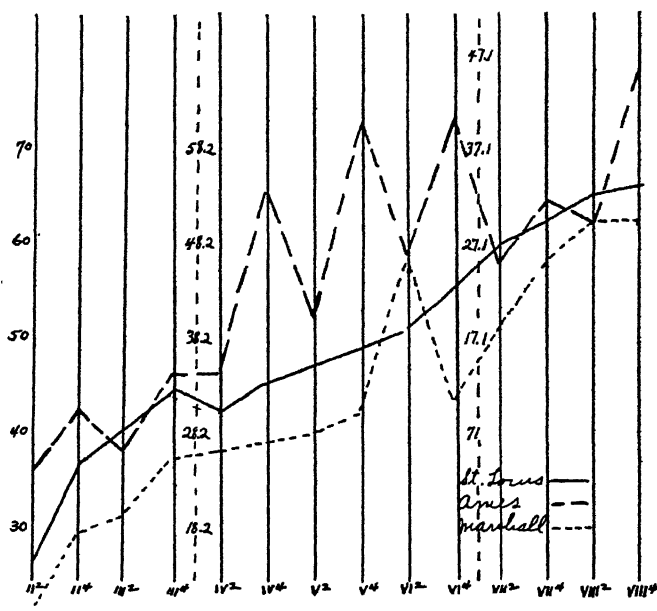


Diagram X compares the quality scores in silent reading of the Ames School and the Marshall School. The same types of differences which have been pointed out in connection with oral reading and rate of silent reading are represented here. The Ames School makes a very good record in general. The high level of achievement in the intermediate grades strikes the attention immediately. This achievement becomes doubly significant when considered with the fact that the achievement of these grades in rate of silent reading is distinctly high also. In the seventh grade and lower eighth grade the Ames School makes a relatively poor record in the rate of silent reading. This is accompanied by relatively poor records in quality of

DIAGRAM X

AVERAGE QUALITY SCORES IN SILENT READING FOR ST. LOUIS
SCHOOLS IN GENERAL AND FOR TWO SELECTED SCHOOLS—
AMES AND MARSHALL



silent reading. Apparently the intermediate grades have worked out a technique in teaching silent reading which secures results which are not paralleled in the upper grades. The Marshall School, on the other hand, is consistently low throughout the grades with but one exception. The comparison suggests the need of an intensive study on the part of the teachers of the Marshall School to determine the cause and remedy for the relatively poor results secured.

CAUSES OF VARIATION IN ACHIEVEMENT AMONG SCHOOLS AS
REVEALED BY THE OBJECTIVE STUDY*A. Influence of Age*

The average rate at which pupils in the various age groups read was determined for each grade and are presented in Table XII. In the second grade the rate of reading decreases with increasing age. During this same period the mastery of the mechanics of oral reading is receiving special emphasis. This indicates that silent reading at the outset is largely dependent upon one's mastery of word recognition. In the third grade the same general tendency and correlation is evident. In the fourth and fifth grades, as silent reading becomes a more important factor in school work, decrease in rate with increase in the age of pupils is far less evident. In the upper grades very little trace is left of the tendency which was so pronounced in the second and third grades.

These facts are very significant in their bearing upon instruction. In the first place, they emphasize the importance of securing a certain amount of ability in the recognition of words and meanings before habits of rapid silent reading are emphasized. In the second place, the data show that pupils in the intermediate and grammar grades develop differently in oral reading ability and in rate of silent reading. Evidence for this conclusion is found in the fact that the age groups do not follow the same direction of growth in the one case as in the other. This may be due to the fact that teachers have not developed a definite technique by means of which increase in rate is secured. As a result each pupil is dependent for his progress on trial and accidental success to a considerable extent. The facts brought out in the table emphasize the point that teachers cannot teach one phase of reading and rest secure in the belief that all phases of reading ability will follow. A definite understanding of the development of each type of reading ability is necessary, and this must be accompanied by a knowledge of the methods which will secure effective progress along desired lines.

Table XIII gives the average quality scores in silent reading for the different age groups. The table shows that after the second grade progress in ability to comprehend the meaning of the printed page is not influenced largely by age groups. Pupils of different ages are assigned to the same class because they possess about the same amount of achievement in school work. Since progress in school work depends so largely upon ability to do effective silent reading, it is in harmony with natural expectations that the average quality scores should be more similar for the various age groups than is true in the case of oral reading. It gives added emphasis to the fact that instruction in silent reading has not been reduced to such a formal basis that the younger, brighter members of the class can acquire a high degree of efficiency as readily as they do in oral reading.

B. Influence of Sex

Table XIV gives the average rate and quality scores for boys and girls in each grade. The table shows that girls are superior to boys in rate of silent reading in the lower grades and that boys are superior to girls throughout the grades in ability to master the thought of what is read. If after repeated tests in various phases of reading ability these reported differences should be verified, one would be justified in concluding that boys need a relatively larger amount of drill on the mechanics of reading and girls need relatively more training in the thoughtful mastery of the printed page. Unreported results secured in connection with the Cleveland survey agree with the results reported above.

TABLE XIII
AGE-GRADE PROGRESS TABLE FOR 4,463 ST. LOUIS PUPILS IN QUALITY
OF SILENT READING

Grade	READING											Ave.
	7	8	9	10	11	12	13	14	15	16	17	18
II	37.3	38.3	35.6	35.9	34.0	28.5	....	....	....	....	....	....
III . . .	27.0	49.2	46.1	44.9	40.2	41.9	40.6	....	....	....	....	....
IV . . . .	....	35.3	33.2	33.8	34.1	33.8	30.4	31.6	55.0	36.0	....	....
V . . . .	....	....	37.8	42.6	38.9	37.5	38.8	32.7	21.8	....	....	....
VI . . . .	....	....	45.0	33.7	46.9	45.1	42.9	40.9	35.9	20.0	....	....
VII . . . .	....	....	....	....	31.5	31.6	28.7	29.2	30.0	24.3	27.5	....
VIII . . . .	....	....	....	....	32.5	38.7	38.3	34.1	31.4	31.0	20.8	17.0

TABLE XIV

COMPARISON OF THE ACHIEVEMENT OF 4,463 BOYS AND GIRLS
IN RATE OF SILENT READING AND QUALITY OF
SILENT READING

Grade	Number of Pupils		Rate of Silent Reading		Quality Score in Silent Reading	
	Boys	Girls	Boys	Girls	Boys	Girls
II	340	352	1.56	1.70	39.00	35.80
III	322	349	2.27	2.35	46.15	44.80
IV	309	346	2.51	2.63	34.04	33.50
V	310	321	2.88	2.88	39.70	37.52
VI	297	362	3.04	2.99	45.28	42.52
VII	275	294	2.90	2.95	31.50	27.46
VIII	261	325	3.04	2.93	38.53	30.85

C. Influence of Nationality

Foreign speaking children made lower scores in quality of silent reading than did English speaking children. Jewish children formed an exception to this rule. There seemed to be little correlation between rate of silent reading and nationality. These facts suggest that reading material should be selected for foreign speaking children with special care. Very extensive reading of simple selections which relate to familiar experiences of the pupils is undoubtedly a requisite of successful results in teaching foreign children effective habits in silent reading.

VARIATION IN ABILITY TO REPRODUCE AND TO ANSWER
QUESTIONS

Differences in the quality scores of silent reading were due to differences in the ability of pupils to reproduce what was read and to answer questions. Under ordinary classroom conditions many teachers test the pupils'

mastery of the printed page by calling for frequent reproductions. The traditional history recitation illustrates this method. Other teachers test their pupils by numerous questions concerning what was read. That pupils may develop relatively more ability in one of these lines than in the other is illustrated by the fact that four fourth-grade classes of St. Louis, each of which received a reproduction score of 21, received the following grades for questions answered: 33, 45, 61, and 82. Furthermore, three fourth-grade classes, each of which received a grade of 41 for questions answered, received the following reproduction scores: 17, 28 and 37. Frequent variations in ability to reproduce and to answer questions were noted among classes as follows: A fourth-grade class in the Bates School received a reproduction score of 21 and a grade of 82 for questions answered, while a sixth-grade class in the same school, using the same test, received a reproduction score of 24 and a grade of 36 for questions answered. A fourth-grade class in the Clinton School received a reproduction score of 20 and a grade of 45 for questions answered, while a sixth grade class received a reproduction score of 40 and a grade of 57 for questions answered.

The facts presented above point to the conclusion that the various phases of silent reading ability do not always develop in the same proportion. Each phase needs special attention, and the teacher must plan instruction so that pupils receive effective training in all phases of silent reading ability. This includes not only ability to reproduce and ability to answer questions, but in addition, ability to select pivotal ideas, ability to organize, ability to determine the relative importance of facts, ability to associate new ideas with one's store of knowledge, etc. To the extent that a teacher gives specialized training along only one or two of these lines, just to that extent will her pupils be more likely to fail in a situation which calls for silent reading ability of a broad character.

RELATION BETWEEN SPEED AND QUALITY OF SILENT READING

The question always arises in studies of this type concerning the relation of speed and quality in silent reading. In order to determine the relation which exists between speed and quality among the pupils of St. Louis the following study was made of more than 400 pupils in each grade from the second to the eighth inclusive. The records of the pupils in each grade were arranged in order on the basis of rate from the best to the poorest and divided into three equal groups. The most rapid third was designated by the single term "rapid," the slowest third by the term "slow," and the middle third by the term "medium." In a similar manner the quality records were divided into tertiles, and the thirds were designated in order, "good," "medium" and "poor." Upon the basis of this classification an individual record must fall into one of the following nine classes.

Rapid Speed and
Good Quality

Medium Speed and
Good Quality

Slow Speed and
Good Quality

Rapid Speed and
Medium Quality

Medium Speed and
Medium Quality

Slow Speed and
Medium Quality

Rapid Speed and
Poor Quality

Medium Speed and
Poor Quality

Slow Speed and
Poor Quality

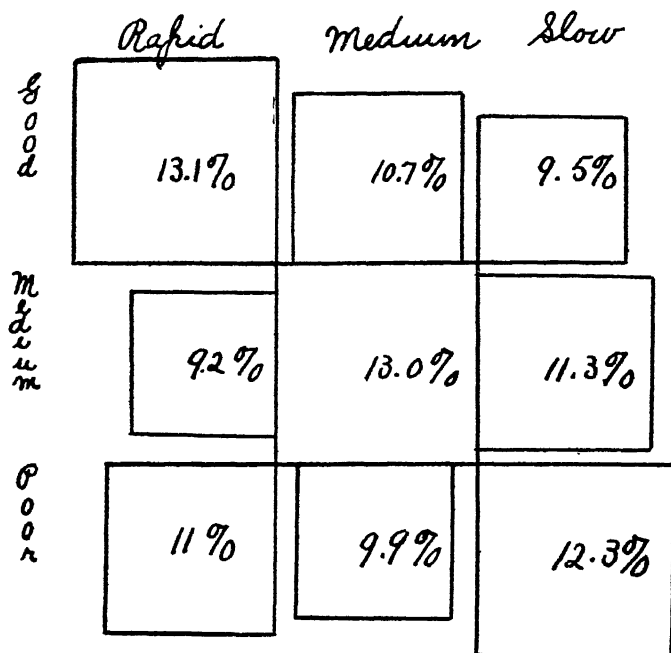
The records were then distributed and the percentage of each grade which falls in each of the nine classes was determined. The average percentage of cases in each class was determined for all the grades. This average together with the percentage for each grade appears in Table XV. The average of the percentages for all grades appears in Diagram XI.

TABLE XV
RELATION BETWEEN SPEED AND QUALITY

Average of All Grades				
	Rapid	Medium	Slow	Total
Good	13.1	10.7	9.5	33.3
Medium	9.2	13.0	11.3	33.5
Poor	11.0	9.9	12.3	33.2
Total	33.3	33.6	33.1	100.0
Second Grade	Rapid	Medium	Slow	Total
Good	12.1	11.5	9.7	33.3
Medium	10.6	12.1	10.6	33.3
Poor	10.8	10.2	12.4	33.4
Total	33.5	33.8	32.7	100.0
Third Grade	Rapid	Medium	Slow	Total
Good	12.5	11.2	9.5	33.2
Medium	11.5	10.8	11.2	33.5
Poor	9.3	11.5	12.5	33.3
Total	33.3	33.5	33.2	100.0
Fourth Grade	Rapid	Medium	Slow	Total
Good	16.6	10.3	6.3	33.2
Medium	8.7	12.4	12.5	33.6
Poor	7.9	10.8	14.5	33.2
Total	33.2	33.5	33.3	100.0
Fifth Grade	Rapid	Medium	Slow	Total
Good	15.2	8.0	10.2	33.4
Medium	6.5	16.4	10.4	33.3
Poor	11.7	8.9	12.7	33.3
Total	33.4	33.3	33.3	100.0
Sixth Grade	Rapid	Medium	Slow	Total
Good	11.9	13.3	8.1	33.3
Medium	10.5	10.5	12.4	33.4
Poor	11.0	9.5	12.8	33.3
Total	33.4	33.3	33.3	100.0
Seventh Grade	Rapid	Medium	Slow	Total
Good	13.0	11.0	9.4	33.4
Medium	6.2	15.5	11.6	33.3
Poor	14.2	6.8	12.3	33.3
Total	33.4	33.3	33.3	100.0
Eighth Grade	Rapid	Medium	Slow	Total
Good	10.3	9.3	13.6	33.2
Medium	10.5	12.9	10.2	33.5
Poor	12.4	11.6	9.3	33.3
Total	33.2	33.7	33.1	100.0

DIAGRAM XI

PER CENT OF 2,940 ST. LOUIS PUPILS FOUND IN EACH OF NINE
SPEED AND QUALITY GROUPS IN SILENT READING.
AVERAGE OF ALL GRADES



The diagram emphasizes the fact that good readers are usually not slow and poor readers are usually not fast. It is evidently not safe to lay down any absolute rule. The average teacher of St. Louis is confronted with pupils who might fall in any one or all of the nine classes mentioned. There are good readers who are rapid and there are good readers who are slow. There are rapid readers who retain

much of what they read and there are rapid readers who retain little. The diagram gives emphasis to the view that instruction to be effective must be planned to meet the needs of pupils of various types in regard to speed and quality. Some pupils should emphasize speed, some quality, and many pupils are weak in both.

An analysis of the results for each grade is even more interesting than the facts revealed by the general average for all grades. Table XV shows two distinct tendencies. From the second to the fourth grade there is a tendency for the proportion of good-rapid readers and the poor-slow readers to increase. Beyond the fourth grade the tendency is in the opposite direction as shown by the decrease in the proportion of good-rapid readers and poor-slow readers. This tendency reaches its height in the eighth grade where it is found that good readers are more frequently slow than rapid and where poor readers are more frequently rapid than slow. It is evident from this discussion that a marked change in relationship between speed and quality has occurred in the intermediate grades.

There are two possible explanations for the change in relationship revealed in Table XV. In the first place, it has been pointed out that there are various sub-groups in each grade among which the relationship between speed and quality varies. In the upper grades in the St. Louis schools it may be that there is an increasing proportion of those groups for which slow speed and good quality are more natural than rapid speed and good quality. On the other hand, the change in relation between speed and quality which occurs in the intermediate grades may be due to the character of the instruction which the pupils receive. The fact that a relationship is very evident in the lower grades and then changes in the intermediate grades suggests the possibility that methods of instruction have developed habits and relationships which were not natural on the part of so many pupils at the outset.

RESULTS OF CLASSROOM OBSERVATIONS

The analysis of the silent reading results has shown that St. Louis secures a very commendable level of achievement both in rate and quality of silent reading as compared with the results secured in other cities. Whatever serious criticisms are offered, therefore, in the light of present standards must be directed at individual schools more than at the city as a whole. On the other hand, the art of teaching silent reading has received but little attention up to the present time. As investigation proceeds and as more effective methods are developed, it is possible that results will be secured which will surpass very distinctly the present high level attained by St. Louis. The teachers of St. Louis should therefore take a progressive stand on this problem and should give greater rather than less attention to problems of teaching silent reading.

During the first grade pupils are more or less unfamiliar with printed symbols and the recognition of words and meanings takes place slowly. The vocal organs, on the other hand, are relatively more highly developed and words can be spoken as rapidly as the meaning and pronunciation are recognized. Oral reading therefore proves to be the more effective means of conducting reading exercises. During the second and third years two types of development take place which make the introduction of silent reading justifiable and advantageous.

In the first place, pupils develop so rapidly in these grades in their ability to recognize meanings and words that silent reading becomes a more rapid process than oral reading. This statement finds strong support in the comparison of the number of lines read orally and silently in the second and third grades of Cleveland as reported in the chapter on reading in "Measuring the Work of the Public Schools" by Dr. Charles H. Judd.

In the second place, experimental studies have proved that when second and third grade pupils have acquired as much mastery of the mechanics of reading as have the pupils of St. Louis their ability to pronounce words surpasses very decidedly their ability to understand the meanings of words. Whenever pupils have reached this stage in their development additional mastery of word pronunciation is less important than increased mastery of meanings. These meanings are best secured by coming in contact with words and sentences time after time until a body of familiar meanings is built up in regard to them. Since silent reading is a more rapid process than oral reading this end may be accomplished more rapidly by means of the former.

The superior results secured by St. Louis are due in part to two methods which are followed by a majority of the teachers. In the first place, it has already been mentioned that St. Louis devotes a great deal of time to quantitative oral reading in these grades with attention directed to the content side. This method increases the rate of reading, brings the pupil in contact with a much wider range of reading material, and improves in a very noticeable way his power over the meanings of words. In the second place, a large proportion of the pupils in St. Louis read a large number of books silently during the second and third grades. It has already been mentioned that the pupils of some classes read as many as one book each week. As contrasted with the pupils who do not have this opportunity, these extensive readers should show marked superiority both in rate and quality of silent reading. The objective tests verify these assumptions.

In addition to the methods outlined above, specific training is given in silent reading by the following devices which were observed. Many teachers have pupils read paragraphs silently and then discuss their content. Some very interesting and profitable exercises of this type were observed.

In connection with some sight reading exercises the teacher asked the pupils to read a page or two very quickly to locate hard words. Dr. C. T. Gray has recently discovered that exercises of this type are very effective with pupils of the earlier grades in increasing their visual span and reading rate. Still other teachers asked pupils to read silently to find the answers to important questions. This type of exercise develops ability to select and to weigh the relative importance of various phases of the subject-matter read. From day to day second and third grade teachers should find opportunity to improve the ability of their pupils along the various lines which go to make an effective silent reader.

By the time the average pupil reaches the fourth grade he has mastered the art of reading sufficiently to use it to advantage. He becomes interested in the subject-matter and he reads primarily to find out something of interest to himself. Wise instruction will take advantage of this tendency of the child and will use it as the basis for securing a thoughtful mastery of the printed page during the intermediate grades.

In harmony with the view outlined in the preceding paragraph some very interesting lessons were observed. One lesson in particular belonged to a series of information lessons concerning Holland. The teacher had secured a large number of appropriate books on Holland. The teacher and class discussed the problem and selected a list of topics which should be developed. Each pupil chose a topic from this list and made it the basis of his study. He read carefully but rapidly all of the references which he could find relating to his topic. Pictures were secured, illustrative materials of various types were collected, and the body of fact secured through his reading was organized in good form. Each pupil reported to his class mates the results of his investigation. Wherever necessary certain important references were read to the class. This method of procedure

speaks for itself. It is highly recommended in place of some of the unprofitable exercises discussed in connection with oral reading in the intermediate grades.

Silent reading deserves special emphasis in these grades from another point of view. The curve of progress in rate of silent reading for the pupils of St. Louis shows that the most rapid progress is made by pupils of the second, third and fourth grades. By the time pupils reach the sixth grade their habits of careful silent reading have been fairly well established. It will be noted that under our present system of instruction little progress or advance is made in rate of careful silent reading beyond the sixth grade. As Diagram VI shows, this is true not only in the case of St. Louis but also in the case of Cleveland and the thirteen other cities represented in the diagram.

The facts presented in the preceding paragraphs should emphasize the importance of both speed and quality of silent reading. During the intermediate grades selection after selection should be assigned and pupils trained to read the selection silently under the guidance of specific purposes. Such recitations cannot be conducted without careful thought and preparation. The specific methods used must be adapted to the selection at hand or selections should be chosen which are adapted to given purposes. Many selections can be read quickly for the story. Several pages of *Black Beauty* may be read quickly to find out the number of things that *Black Beauty* had to become accustomed to in order to be a well trained horse. Speed can be encouraged by limiting the amount of time given to the reading. On the other hand, many selections should be read with more care in order to determine what the essential points in the selection are, or to weigh the relative importance of the facts, or to associate the facts with what one already knows. At frequent intervals the pupils should be tested in various phases of silent reading ability. The

results of these tests should direct the teacher in her choice of future assignments.

It has already been pointed out that oral reading predominates in the upper grades. Wider training in habits of effective silent reading is recommended for pupils of the seventh and eighth grades. Boys and girls who leave the elementary school and go either into the high school or into the world of practical affairs should have acquired a high degree of skill in the silent individual mastery of the printed page. Much of the time now given in some classes to a detailed, analytical study of difficult selections might be more profitably spent in further application of the suggestions offered for the intermediate grades.

SUMMARY OF THE RESULTS SECURED THROUGH THE STUDY OF SILENT READING

The study of silent reading has shown that on the basis of present standards of achievement St. Louis ranks very high both in rate and quality. This record is indeed commendable and the problem which confronts St. Louis, therefore, relates more directly to the wide variation in the achievement among individual schools.

An analysis of the results of the objective tests suggested the following possible causes for variation:

(a) In the lower grades progress in both rate and quality of silent reading is correlated with age groups. In the intermediate and upper grades this relationship is no longer evident. This suggests the possibility that progress in oral reading and in silent reading is dependent in part at least on different causal factors.

(b) Girls rank slightly higher than boys in rate of silent reading, particularly in the lower grades, while boys rank noticeably higher than girls in quality of silent reading throughout the grades.

(c) Pupils who speak a foreign language show less achievement in quality of silent reading than do English speaking children.

An analysis of the relationship between rate and quality showed that in general good quality and rapid rate are more frequently related than good quality and slow rate, and that slow rate and poor quality are more frequently related than high rate and poor quality. An examination of the results showed that the relationship just described increased noticeably to the end of the fourth grade. From this point on the opposite tendency in the relationship between rate and quality became increasingly conspicuous. Possible explanations for the change in the character of this relationship were found in differences in the composition of the groups and in the influence of formal instruction.

The classroom observations led to the following suggestions. (a) A large percentage of the schools should introduce quantitative reading in the second and third grades and should encourage extensive outside reading as much as possible. All schools should introduce more carefully planned lessons to secure improvement in various phases of silent reading ability. (b) The intermediate grades should give special attention to the development of habits of rapid and careful silent reading. Informational lessons might be made the basis of much of this work. Silent reading tests should be given frequently to determine the direction of growth and the instructional needs of pupils. (c) Part of the time now given to oral reading in the upper grades should be devoted to training pupils in the silent independent mastery of the printed page.

C. Supervision of Reading

Throughout this report the fact has been emphasized that St. Louis ranks high in achievement along all important phases of reading ability. Furthermore, it has been stated

frequently that whatever criticism was offered in regard to the results secured must be offered concerning the practices of individual schools rather than concerning the city as a whole. In harmony with this statement, particular schools and classrooms have been made the object of frequent criticism. Many of the schools which were criticized and many of the individual classrooms which were visited are in need of expert assistance. This situation places a serious responsibility and a splendid opportunity before principals and supervisors.

In the past the supervision of reading in St. Louis, as well as of other subjects, has been largely personal in character. Principals and supervisors have visited classrooms frequently and have offered such suggestions as their good judgments dictated. During the last few years a demand has arisen for a type of supervision which measures the results of teaching as well as the methods of teaching. There has been a growing recognition of the fact that both points of view are indispensable in expert supervision.

Beginnings of this two-fold type of supervision have been made in St. Louis. In connection with the supervision of the Laclede School the principal has adopted measures of the results of teaching as a permanent part of the routine of supervision. At times the general supervisors of St. Louis have utilized or recommended similar devices. In a recent issue of the Superintendent's report the following statement occurs: "In order to ascertain the ability of third grade children to assimilate the content of what they read they have been tested twice on typewritten stories of about 250 words. . ." Such devices secure the type of information which should be secured frequently in connection with the supervision of reading. On the basis of such facts a supervisor is able to locate strong and weak points in his schools, to analyze the causes of variations, to receive suggestions concerning desirable modifications in instruction, and to

estimate in a more thoroughgoing way than is otherwise possible the character of the results which are secured by the teachers under his instruction. It is earnestly recommended that supervisors and principals alike introduce objective measures of the results of teaching as a permanent part of their routine of supervision.

Furthermore, it is necessary that standards of attainment be established. In this connection the teachers as well as the supervisors should take an active part. By tests given throughout a city standards of attainment should be derived. Each teacher should become familiar with the methods of giving these tests. She should frequently utilize them in examining her work to find sources of strength and weakness. Through the co-operation of teachers and supervisors progressive revisions in standards of attainment and methods of procedure will be made. This type of co-operation is necessary because it is only when all of the units of a school system work consistently together toward clearly defined ends that the most effective results can be secured. It is therefore recommended that methods of testing be introduced which will define clearly the ends to be attained, which will aid the supervisor in making his services more pointed and effective, and which will enable the teacher to improve daily the quality of her instruction.

D. Recommendations

The more important recommendations which issue from this chapter may be summarized as follows:

The supply of reading material for each grade should be increased and enriched. The first grade is in need of simple, attractive stories through the reading of which the fundamentals can be mastered. The second and third grades are in need of a large supply of very interesting supplementary readers to be used as the basis for quantitative oral and silent reading. The intermediate and grammar grades are

in need of an enlarged supply of reading material, rich in content, which can be used in developing effective habits in silent reading. The Board of Education should take steps immediately to enlarge and enrich the present supply of supplementary readers.

Silent reading should receive greater emphasis in the intermediate and grammar grades. It is recommended that a major portion of the reading recitations in these grades be devoted to carefully planned exercises which will secure progress along definite phases of silent reading ability.

It is recommended, furthermore, that the teaching of reading be made a subject of aggressive, constructive study on the part of all the teachers. Committees of supervisors and teachers should be organized to study in detail these problems. Group conferences of teachers of specific grades might be carried on frequently with great profit. The methods used by the more successful teachers could be discussed and demonstrated at these conferences. The supervisors should have at hand a list of teachers who are particularly skillful along various lines, and the less successful teachers might be sent frequently to observe and study the methods employed. Each teacher should assume an inquiring, investigating attitude toward her own problems to the end that the quality of her teaching be made more effective. Frequent tests should be given by each teacher to determine the direction of the progress which her pupils are making and to determine the most pressing instructional needs of her pupils.

The supervisory staff should enlarge the scope of its work to include frequent measurements of the results of teaching reading. Administrative provision could be made with profit to incorporate such methods as a permanent part of the regular routine of supervision. Out of such efforts there should develop tentative standards of attainment and more definite knowledge on the part of each teacher of the results which should be secured.

CHAPTER XIII

ARITHMETIC

BY CHAS. H. JUDD

Summary

This chapter describes the results secured from an arithmetic test which was given in thirty-eight schools by the principals. The test is a standard test which has been given in other cities and deals with various degrees of complexity of the four fundamental processes.

The progress from grade to grade in all of the schools is traced. At the same time the relative difficulty of the different kinds of problems is discovered. By such studies as these standards of achievement in arithmetic can be established which may safely be used in judging schools. The standards here discovered are useful because they are derived from the work of the pupils and not from any outside source.

Once the general averages are ascertained, the differences between different schools, different pupils, and different school systems, can be determined with assurance. Results of comparisons of this type are presented in the text far enough to show that schools differ from each other very radically. The general record for St. Louis is superior.

ARITHMETIC

In order to test the work of the schools in arithmetic the principals of thirty-eight schools were called into conference and the methods of giving the tests were fully described to them. They were asked to give these tests to the second and fourth quarter divisions in each of the grades from the third to the eighth.

The test consists in a series of exercises which grow more and more complex and repeat at each ascending level the four fundamental arithmetical processes. Test A is a test in simple addition of two numbers. The second, third, and fourth tests deal in a similar fashion with the simple processes of subtraction, multiplication, and division. The fifth test is in the addition of a short column of figures; the sixth is subtraction of three-place or four-place figures. In the subsequent parts of the test the problems are lengthened; thus, in addition the columns of figures are lengthened and therefore require another form of addition since the long-column additions involve a span of attention much wider than that which is required by the short-column additions. Addition appears finally on the last level of the test in the form of columns of four-place numbers where the result must be carried forward from column to column, thus involving the carrying process as a new phase of addition. All of the other fundamental processes are treated in the same way, there being a gradual increase in the complexity of the examples at each new level.

Besides dealing with integers the test contains two exercises in fractions. The first exercise deals with the addition and subtraction of simple fractions which do not need to be changed in their denominators before the addition and subtraction are carried out. The last exercise in the test deals with the addition and subtraction of fractions which must

be reduced to a common denominator and includes also certain examples in the division and multiplication of fractions.

The tests were given near the end of the year so that the pupils had the benefit of the full year of training. Not all of the schools were able to give the tests to the complete quota of classes. The results are therefore in some cases incomplete so far as grades are concerned. The papers from each grade include all of those who were present on the day that the test was given.

The exercises were scored by the pupils and teachers in the grades. The scoring done in the schools was checked up extensively. The error which appeared in the scoring averaged somewhat less than two per cent of all of the examples canvassed. In some cases the errors in scoring arise out of the fact that credit is given where an example is partly done. Where the error in marking is large the attention of those who compiled the table was naturally called to the mistake, and it can be regarded as altogether certain that even within the small margin of error above described the tabulating removes any gross mistakes in the correction of the papers.

The individual papers were now arranged in order and the median paper, that is the one above which lie fifty per cent of the class and below which lie fifty per cent of the class, was chosen as the typical paper for the grade. The medians for the various third grades, fourth grades, and so on, for all the schools tested, were then arranged in order and the middle grade was taken as the typical grade for the whole group of schools.

The results can be regarded as typical of the whole system since the schools in which the tests were tried include many of the larger schools of the city and since the selection of the schools was made with a conscious view to distributing them through all of the different parts of the school system.

It will be understood that the same test was given in the same fashion to all of the grades that were tested. When, therefore, we pick out the median score made by a given grade

and compare it with the median score made by the grade next above, we shall have in the difference between the two median scores an indication of the amount of progress which is made from grade to grade. In like fashion, when we compare the median score made in one part of the test with the median score made in another part of the test, we have an indication of the relative difficulty of the different kinds of problems.

The general results are presented in Table I which gives the median results in all sections of the test. In order that the various sections of the test may be clearly described the first line of each section is given on the next two pages. From this reproduction of the test it will be seen that A means simple addition, B means simple subtraction, and so on. Table I should be read as follows: Grade 3—2 solved in the median case 14.6 examples in Test A. Reading down the first vertical column we see that the same grade solved only 9.9 examples in Test B. Reading across the uppermost horizontal line in the body of the table we see that grade 3—4 solved 18.3 problems in Test A as contrasted with 14.6 solved by grade 3—2; that is, there is a gain of 3.7 examples as we pass from grade 3—2 to grade 3—4.

The results are represented in graphic form in Diagrams I and II. Here the length of each horizontal line represents graphically the achievements of a grade. The figures set down at the right end of the lines indicate the exact number of examples represented by each line. It will be seen from an inspection of these figures that progress from grade to grade is not absolutely regular. For example, in Test A we find that there is a rapid increase in the rate of addition up to grade 5—2. Grade 5—4 shows no increase in speed. The difference is made up when we pass to grade 6—2, where the improvement is conspicuous. Again in grade 6—4 the change is not very evident. From this point on, the improvement within the grade does not seem as great as from grade to grade.

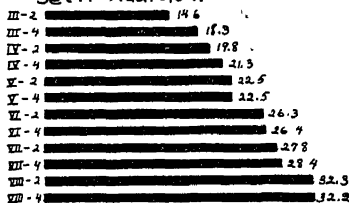
TABLE I
MEDIAN RESULTS IN ALL SECTIONS OF THE ARITHMETIC TEST

Section of the Test	3-2	3-4	4-2	4-4	5-2	5-4	6-2	6-4	7-2	7-4	8-2	8-4
A.	14.6	18.3	19.8	21.3	22.5	22.5	25.3	26.4	27.8	28.4	32.3	32.2
B.	9.9	12.2	17.1	17.0	18.0	20.0	20.3	20.6	22.8	24.2	26.7	28.3
C.	7.6	10.5	16.7	15.4	16.9	16.7	18.2	18.3	18.9	19.8	20.7	21.9
D.	9.0	12.2	15.8	16.3	18.4	17.8	19.3	20.5	21.3	22.3	23.8	25.7
E.	3.8	4.8	5.7	5.4	6.0	6.1	6.9	7.1	6.6	7.4	8.0	8.4
F.	2.3	3.5	5.6	6.0	6.4	7.4	8.0	8.3	8.5	9.6	10.1	11.3
G.	2.7	3.5	4.9	5.1	5.5	5.6	5.9	6.2	6.4	6.9	7.4	7.8
H. ....	.7	3.8	7.8	6.8	4.8	6.5	8.0	8.1	9.5	9.7	10.8	12.0
I.	1.1	1.4	2.0	2.0	3.0	3.2	3.9	4.1	4.5	5.0	5.4	5.8
J.	1.6	2.9	3.8	3.9	4.1	4.3	5.0	5.1	5.2	5.3	5.4	5.8
K.	0	0	3.3	4.0	5.0	5.8	6.9	7.4	8.3	9.7	10.3	11.7
L.	0	0	2.5	2.9	3.1	3.4	4.3	4.1	4.6	4.7	5.2	5.3
M. ....	.5	2.1	2.9	3.3	3.4	3.7	4.2	4.4	4.5	4.9	5.2	5.3
N.	0	0	.8	1.1	1.3	1.4	1.6	1.8	2.0	2.0	2.6	2.7
O.	0	0	0	2.5	3.3	3.3	3.6	4.1	4.8	5.6	6.1	6.6

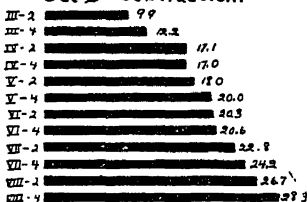
The numbers in the body of the table indicate the median score in correct examples made by each grade tested in each section of the test.

GRAPH I

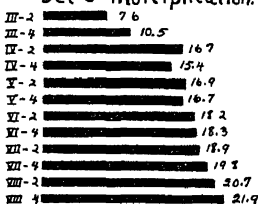
Set A - Addition.



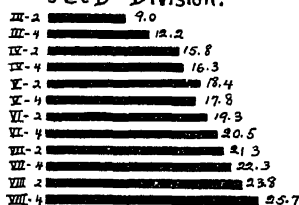
Set B - Subtraction.



Set C - Multiplication.



Set D - Division.

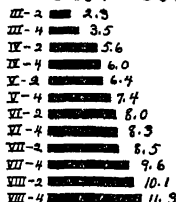


Median Records for all Schools
Score represented by length of bar

Set E - Addition



Set F - Subtraction.



Set G - Multiplication.



Set H - Fractions.



GRAPH II

Set I-Division

III-2	1.1
III-4	1.4
IV-2	2.0
IV-4	2.0
V-2	3.0
V-4	3.2
VI-2	3.9
VI-4	4.1
VII-2	4.5
VII-4	5.0
VIII-2	5.4
VIII-4	5.8

Set J-Addition.

III-2	1.6
III-4	2.9
IV-2	3.8
IV-4	3.9
V-2	4.1
V-4	4.3
VI-2	5.0
VI-4	5.1
VII-2	5.2
VII-4	5.3
VIII-2	5.4
VIII-4	5.8

Set K-Division.

III-2	0
III-4	0
IV-2	3.3
IV-4	4.0
V-2	5.0
V-4	5.8
VI-2	6.9
VI-4	7.4
VII-2	8.3
VII-4	9.7
VIII-2	10.3
VIII-4	11.7

Set L- Multiplication.

III-2	0
III-4	0
IV-2	2.5
IV-4	2.9
V-2	3.1
V-4	3.4
VI-2	4.3
VI-4	4.1
VII-2	4.6
VII-4	4.7
VIII-2	5.2
VIII-4	5.3

Set M-Addition.

III-2	.5
III-4	2.1
IV-2	2.9
IV-4	3.3
V-2	3.4
V-4	3.7
VI-2	4.2
VI-4	4.4
VII-2	4.5
VII-4	4.9
VIII-2	5.2
VIII-4	5.3

Set N-Division.

III-2	0
III-4	0
IV-2	.8
IV-4	1.1
V-2	1.3
V-4	1.4
VI-2	1.6
VI-4	1.8
VII-2	2.0
VII-4	2.0
VIII-2	2.6
VIII-4	2.7

Set O-Fractions.

III-2	0
III-4	0
IV-2	0
IV-4	2.5
V-2	3.3
V-4	3.3
VI-2	3.6
VI-4	4.1
VII-2	4.8
VII-4	5.6
VIII-2	6.1
VIII-4	6.6

Median Records for all Schools.
Score represented by length
of bar.

Similar irregularities appear in some of the other diagrams, especially in multiplication. We find that grade 4—2 has so far exceeded the record of grade 3—4 that it constitutes a distinct irregularity in the whole record. In the case of Test H, which is the first test in fractions, we find a very conspicuous falling off of ability to deal with fractions in the fourth and fifth grades.

These various irregularities in the different parts of the test suggest the importance of emphasizing in some cases more and in some cases less the various aspects of arithmetic. For example, in the case of Test H, it may be that the more elaborate technique of dealing with fractions which have unlike denominators so takes up the attention of pupils in the 5—2 grade that they do not deal as well with the simple form of manipulation of fractions required in the test as do the younger children in grade 4—2. At any rate, either the examples used in the test or the achievements of the children show here some irregularity which is very striking.

Other facts may be drawn from the diagrams and from the table. Thus, it will be seen that the process of subtraction is more difficult than the process of addition. This is a result which has appeared in all of the different school systems where this test has been applied. Furthermore, it will be seen that multiplication is more difficult than either subtraction or addition. The achievements of the children in these examples are somewhat less than their achievements in the earlier sections of the test. This may be due in part to the fact that the results in the multiplication examples frequently require the writing of two numbers more frequently than in the other sections of the test, but the difference in this respect is hardly enough to account for the difference between the addition set and the multiplication set. Furthermore, the subtraction series which evidently requires the writing of only smaller numbers in the results is lower in the recorded scores than the addition set, thus making it clear that the time required to write the results is not a major consideration.

SET A—Addition—

1	6	9	0	4	1	7	9	3	2	1	3	6
2	6	5	1	2	3	7	6	0	4	5	8	9
—	—	—	—	—	—	—	—	—	—	—	—	—

SET B—Subtraction—

9	7	11	8	12	1	9	13	4	12
9	3	6	1	3	0	7	8	3	6
—	—	—	—	—	—	—	—	—	—

SET C—Multiplication—

3	4	9	0	5	4	2	7	4	9
2	7	8	2	6	1	9	6	0	5
—	—	—	—	—	—	—	—	—	—

SET D—Division—

3)9	4)32	6)36	2)0	7)28	9)9	3)21
—	—	—	—	—	—	—

SET E—Addition—

5	2	9	2	6	1	4	9
2	8	8	8	3	4	6	7
2	8	0	5	4	2	5	1
0	5	7	0	8	5	3	5
4	1	6	6	8	4	4	3
—	—	—	—	—	—	—	—

SET F—Subtraction—

616	1248	1365	1092	716
456	709	618	472	344
—	—	—	—	—

SET G—Multiplication—

2345	9735	8642	6789	2345
2	5	9	2	6
—	—	—	—	—

SET H—Fractions—

$$\frac{3}{5} + \frac{1}{5} = \quad \frac{6}{9} - \frac{4}{9} = \quad \frac{4}{9} + \frac{1}{9} = \quad \frac{8}{9} - \frac{7}{9} =$$

SET I—Division—

$$4 \overline{)55424}$$

$$7 \overline{)65982}$$

$$2 \overline{)58748}$$

$$5 \overline{)41780}$$

SET J—Addition—

7	9	4	7	2	9
5	2	5	1	9	6
4	4	8	9	4	2
2	8	1	4	8	4
6	2	4	3	5	7
0	7	8	2	1	1
5	5	5	8	5	3
1	3	1	5	2	9
8	6	3	2	4	2
3	1	9	7	3	3
2	4	6	7	6	8
9	8	3	1	7	5
9	8	5	9	6	5

SET K—Division—

$$21 \overline{)273}$$

$$52 \overline{)1768}$$

$$41 \overline{)779}$$

$$22 \overline{)462}$$

$$31 \overline{)837}$$

SET L—Multiplication—

$$\begin{array}{r} 8246 \\ 29 \\ \hline \end{array}$$

$$\begin{array}{r} 3597 \\ 73 \\ \hline \end{array}$$

$$\begin{array}{r} 5739 \\ 85 \\ \hline \end{array}$$

$$\begin{array}{r} 2648 \\ 46 \\ \hline \end{array}$$

SET M—Addition—

7493	8937	8625	2123	5142	3691
9016	6345	4091	1679	0376	4526
6487	2783	3844	5555	4955	7479
7591	4883	8697	6331	9314	2087
6166	1341	7314	6808	5507	8165

SET N—Division—

$$67 \overline{)32763}$$

$$48 \overline{)28464}$$

$$97 \overline{)36084}$$

$$59 \overline{)29382}$$

SET O—Fractions—

$$\frac{11}{15} + \frac{1}{6} =$$

$$\frac{9}{14} - \frac{1}{4} =$$

$$\frac{3}{5} \times \frac{5}{6} =$$

By comparing the degree of accuracy exhibited in solving any particular combination it is possible to pick out in each section of the test those combinations which are more difficult and those which are easy. One conspicuous and easily intelligible illustration of this can be given by making an analysis of Test O, which is a test dealing with fractions and including all of the fundamental processes. Five schools are taken as typical, and the number of examples attempted in Test O is compared with the number that were correctly solved. This is done for several different grades. The cases where fractions are to be added are distinguished from those where the process is one of subtraction or one of division or multiplication. Table II gives the results and the percentages of accuracy in each of these schools. The conspicuous fact which appears in this table is that in each of the schools, and in the aggregate, the multiplication of fractions is very much easier for the pupils than any of the other processes. Division is seen, when individual schools are examined, to be somewhat more difficult than the process of multiplication. Subtraction and addition, while they differ very little from each other, are evidently the most difficult processes in this section of the test. The direction and degree of difference between addition and subtraction vary in the different schools. Other analysis can be made if the same comparative method of rating examples in each section is adopted.

The general results presented in Table I show the extent to which there is progress from grade to grade; it is also possible to tabulate the results so as to show how one school building differs from another. This comparison can be carried out as follows. Each of the thirty-eight schools in which the tests were given was put down in the order of excellence for each section of the test for each grade. For example, twenty-four of the thirty-eight schools tested gave Test A in grade 4—2. These twenty-four schools were arranged in the order of achievement as indicated in Table III. The twenty-four schools were then given place scores. In order to simplify

TABLE II
ANALYSIS OF RESULTS IN THE VARIOUS PROCESSES IN SET O

	Addition			Subtraction			Multiplication			Division		
	At-tempts	Rights	Per Cent of Accu-racy	At-tempts	Rights	Per Cent of Accu-racy	At-tempts	Rights	Per Cent of Accu-racy	At-tempts	Rights	Per Cent of Accu-racy
Laclede . . . 5-4	23	13	56+	27	9	33+	42	35	83+	22	15	68+
Laclede . . . 6-2	30	19	63+	34	23	68—	41	38	93—	37	25	68—
Laclede . . . 6-2	32	22	69—	33	31	94—	43	40	93+	38	26	68+
Laclede . . . 8-2	29	18	62+	35	26	74+	40	35	88—	32	22	69—
Ashland . . . 6-2	50	17	34	50	17	34	58	47	81+	38	18	47+
Ashland . . . 6-4	49	19	39—	43	8	18+	44	21	48—	32	0	24
Ashland . . . 7-2	61	20	33—	51	22	43+	73	56	77—	45	19	42+
Ashland . . . 8-4	128	78	61—	110	60	55—	147	128	87+	126	86	68+
Banneker . . . 5-4	37	1	3—	39	0	0	50	32	64	22	0	21
Banneker . . . 6-4	33	2	6+	34	4	12—	36	24	67—	23	4	17+
Banneker . . . 7-4	27	6	22+	30	3	10	42	30	71+	15	1	7—
Banneker . . . 8-4	42	27	64	48	26	54+	67	55	82+	41	15	37—
Mullanphy . . . 5-2	40	1	3—	40	2	5	42	27	64+	40	1	3—
Mullanphy . . . 6-4	42	37	88+	44	37	84+	67	65	97+	48	41	86+
Mann 5-4	25	2	8	29	2	7+	31	28	90+	11	90	0
Mann 8-4	82	18	22—	83	9	11—	117	74	63+	70	22	31+
Total	730	300	41+	730	279	38+	940	735	78+	640	295	46+

somewhat the scoring the whole group was divided into four subdivisions of six schools each. The highest score was given to the six schools in the uppermost part of the list. These were regarded as having a score of four. The next lower group of schools was scored by giving the score three to each school; the next lower group received the score two, and finally the lowest section was given the score of one. The score thus obtained in a single school for each section of the test and for each grade was set down in a table as shown in Table IV for the Adams School. The results for each grade were then averaged as shown in the lowest horizontal line. The averages for each grade in all of the schools tested are given in Table V. It should be noted that in the lower grades only those sections of the test are included in the average from which positive scores were secured.

With such a table in hand a principal can determine in a general way the standing of each grade and also the relative place of his school in the group of schools tested.

TABLE III

MEDIAN SCORES OF THE TWENTY-FOUR SCHOOLS GIVING TEST
A IN GRADE 4—2

Charless	39.6	Ashland	19.6
Gardenville	31.3	Mt. Pleasant	19.5
Douglas	30.0	Blow	19.0
Lyon	28.3	Hamilton	19.0
Howard	26.1	Adams	18.0
Laclede	24.5	Garfield	17.6
Carondelet	24.0	Mullanphy	17.2
Field	23.8	Arlington	14.5
Walnut Park	23.8	Columbia	13.9
Carr	23.0	Wyman	13.8
Crow	21.5	Banneker	13.3
Rock Spring	20.0	Eliot	13.2

Such comparisons as those outlined above can be made more productive by dealing separately with each section of the test and finally with each individual child's record. One illustration of this kind of comparison may be offered by showing in sections E and F the extent to which the pupils in a given grade differ from each other in their power to deal with a given set of problems.

TABLE IV

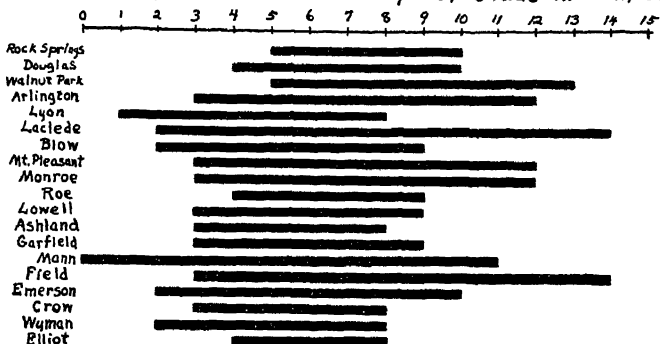
THE PLACE SCORES FOR THE ADAMS SCHOOL IN ALL DIVISIONS
OF THE TEST

Set	3—2	3—4	4—2	4—4	5—2	5—4	6—4	7—4	8—4
A	3	3	2	1	2	1	3	4	2
B	3	2	2	1	4	2	3	3	1
C	4	2	2	3	3	3	3	4	4
D	3	3	3	2	3	3	3	2	1
E	4	3	4	4	4	3	3	2	2
F	4	3	4	2	4	4	4	1	1
G	4	3	2	2	3	4	4	3	2
H	4	3	3	4	3	3	2	2	2
I	3	3	2	3	3	3	4	2	1
J . . . . .	.	4	1	4	4	3	4	3	2
K . . . . .	.	.	2	2	4	3	3	2	2
L . . . . .	.	4	2	2	3	2	4	3	3
M . . . . .	.	4	4	4	4	4	4	4	4
N . . . . .	.	.	3	3	2	4	3	2	3
O . . . . .	.	.	4	4	4	4	3	4	4
Average .	3.6	3.1	2.7	2.7	3.3	3.1	3.3	2.7	2.3

In Diagrams III and IV each horizontal line represents a grade; the extreme left end of the line represents the lowest score in the set in the given grade of a certain school. The extreme right end of the line shows the highest score made by any pupil in the same grade. The length of the line thus indicates the range of variation within the grade. It will be

GRAPH III

Individual Variations in 19 Groups of Grade VII-2 in Set E.



GRAPH IV

Individual Variations in 19 Groups of Grade VII-2 in Set F.

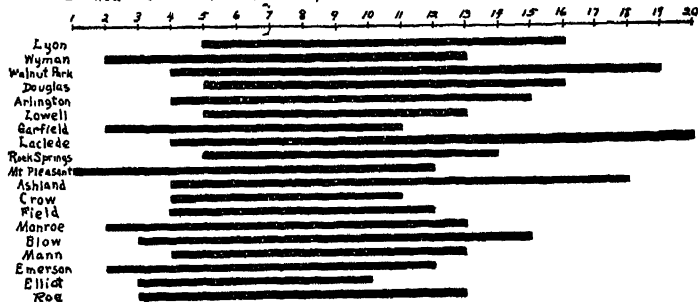


TABLE V
THE AVERAGE PLACE SCORES FOR EACH GRADE IN ALL OF THE SCHOOLS TESTED

Schools	3-2	3-4	4-2	4-4	5-2	5-4	6-2	6-4	7-2	7-4	8-2	8-4
Howard	3.5	4.0	3.9	3.7	...	...	...	...	...	...	...	...
Douglas	3.6	3.5	3.5	...	3.9	...	4.0	...	3.9	...	...	...
Charless	3.8	3.5	3.9	...	3.8	...	...	3.7	...	...	...	...
Sigel . . . . .	...	3.0	...	3.2	...	2.8	...	3.8	...	3.3	3.9	4.0
Walnut Park	3.7	3.5	3.0	3.0	2.9	3.6	3.9	...	3.8	3.5	3.7	3.3
Carr	3.3	2.2	2.8	3.9	3.9	3.9	...	...	...	...	...	...
Carondelet . . . . .	...	3.0	3.3	3.1	3.6	3.9	3.2	3.9	...	1.8	3.5	...
Des Peres	3.5	3.3	...	2.9	...	...	...	...	...	...	...	...
Gardenville . . . .	...	3.9	2.7	3.1	2.2	3.5	...	3.0	...	1.8	2.5	2.9
Laclede	3.4	3.2	3.8	2.9	3.2	3.5	2.9	2.0	3.1	2.5	3.1	2.9
Adams	3.6	3.1	2.7	2.7	3.3	3.1	...	3.3	...	2.7	...	2.3
Crow	3.4	2.2	1.8	1.5	3.6	2.0	3.8	...	2.7	3.2	3.7	3.7
Lyon	1.3	2.0	3.1	2.9	3.4	2.6	3.3	3.3	3.2	3.0	3.4	3.1
Rock Spring . . . .	...	...	3.1	2.7	3.4	2.7	2.5	2.9	3.1	2.7	2.4	2.5
Baden	2.5	2.7	...	3.1	2.0	3.1	...	2.0	...	3.8	...	2.5
Neosho	2.8	2.6	...	...	...	...	...	...	...	...	...	...
Ashland . . . . .	...	3.0	2.7	3.6	2.4	3.1	2.9	3.1	2.3	2.3	2.5	1.7
Garfield	3.3	2.3	2.0	2.5	2.5	2.7	2.3	2.9	2.5	2.9	2.5	2.2
Blow	2.2	2.8	1.9	3.0	3.6	2.6	2.8	2.3	1.7	1.7	3.8	3.3
Penrose . . . . .	...	2.5	...	1.8	...	...	...	3.7	...	2.2	...	2.3
Arlington	2.0	3.4	2.1	2.6	1.7	1.9	2.0	2.1	2.9	3.5	2.0	3.2
Mt. Pleasant	2.5	2.2	2.7	3.3	...	2.0	1.7	1.7	2.9	2.9	...	...
Lowell	2.8	1.7	...	1.6	1.5	...	2.1	2.4	2.5	3.2	3.1	3.3
Carr Lane . . . . .	...	2.5	...	2.1	...	2.6	...	...	...	...	...	...

TABLE V—Continued

THE AVERAGE PLACE SCORES FOR EACH GRADE IN ALL OF THE SCHOOLS TESTED

Schools	3-2	3-4	4-2	4-4	2-5	5-4	6-2	6-4	7-2	7-4	8-2	8-4
Eliot	1.8	2.3	1.3	2.4	1.9	...	1.7	2.2	2.4	2.7	2.7	3.1
Sherman	1.3	...	...	1.7	2.6	...	...	2.5	...	3.0	...	2.1
Feld	2.5	2.0	3.1	2.9	1.7	2.2	1.2	3.1	2.0	1.2	1.5	2.1
Roe	2.5	...	...	2.5	2.1	2.7	...	1.3	1.7	2.2	1.8	...
Wymen . . . . .	...	2.0	1.8	2.1	2.3	1.4	2.6	2.9	2.2	2.8	1.8	2.5
Monroe	2.2	...	...	...	3.0	...	1.6	2.2	1.9	2.5	1.2	2.2
Columbia	1.1	1.0	1.1	1.6	2.2	2.6	2.6	2.3	...	2.9	2.6	2.6
Hamilton	2.7	2.3	...	...	1.2	1.6	...	...	...	...	...	...
Mullanphy . . . . .	...	1.7	1.6	...	1.9	...	...	2.3	...	...	...	...
Emerson . . . . .	...	2.5	...	2.1	2.1	1.1	1.6	1.3	2.0	1.9	1.6	2.1
Lincoln . . . . .	...	2.0	...	1.1	...	...	...	...	...	...	...	...
Mann	1.7	1.8	...	...	1.5	1.1	1.2	1.7	1.4	1.3	1.0	1.3
Delany . . . . .	...	1.2	...	1.2	1.8	...	...	1.2	...	1.5	...	1.3
Banneker	1.5	1.0	1.2	1.1	1.0	1.0	...	1.0	...	1.0	1.0	1.1

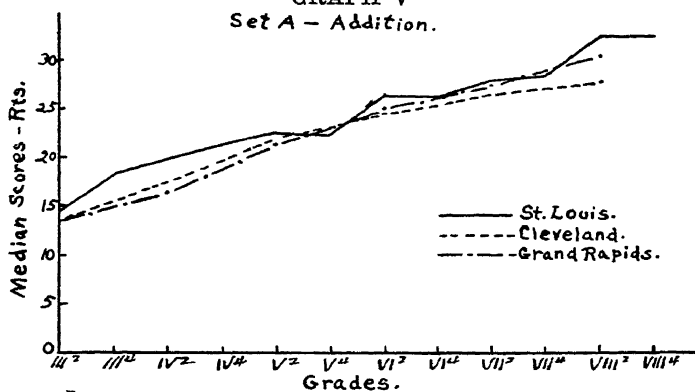
seen at once that the range of variation differs greatly in different schools.

Finally, the relative achievement of children in the St. Louis schools as contrasted with the pupils of like grade in other school systems can be worked out. Exactly the same test was given in the schools of Grand Rapids. A test differing slightly in one or two sections¹ was given in the schools of Cleveland, and the material which enters into the various tests has for some time past been used in the general arithmetic tests carried on by Mr. S. A. Courtis. A careful correlation of the tests of Cleveland and Grand Rapids with the results shown by Mr. Courtis' general tests go to show that Grand Rapids and Cleveland are typical schools as compared with the large number tested by Mr. Courtis. Indeed, in Grand Rapids the results are high because the school system has for some time past been using the Courtis practice pads in regular daily routine. Diagrams V to X inclusive show the relative standing of the St. Louis schools in each grade for each division of the test.² The results as exhibited in these diagrams are for the most part indicative of superiority in the St. Louis schools. Here and there the St. Louis record falls below the record of the other two systems, but in general the St. Louis line runs above the other lines. Especially is this true in the divisions of the test that deal with fractions. Here the St. Louis schools evidently begin their work in fractions earlier than the other school systems, and the advantage which is gained at the outset by the earlier introduction of these topics is retained throughout the other grades.

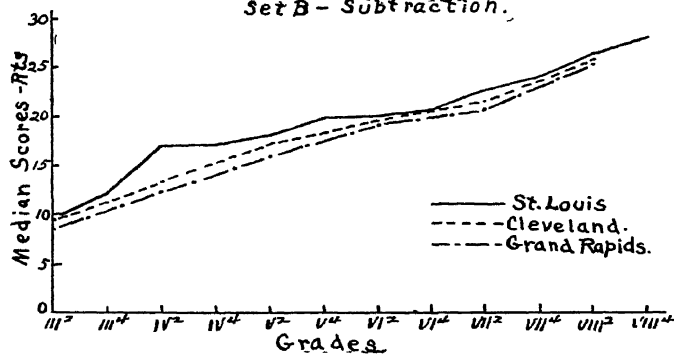
¹ The most radical change was made in Section K, that dealing with long division. The Cleveland results are omitted from the chart in this case because they were derived from an easier set of problems.

² The tests were given later in the year in the St. Louis schools than in the other two systems. The comparisons are not vitiated, however, by this fact, though the superiority of St. Louis schools as shown should be slightly discounted.

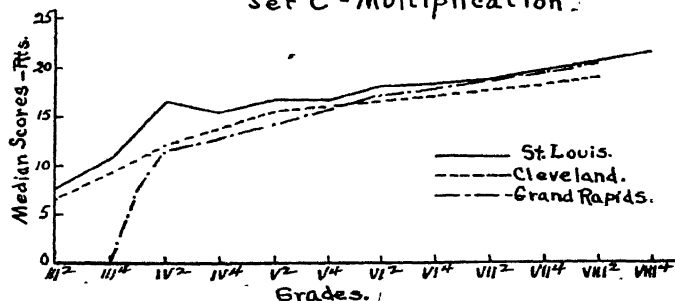
GRAPH V
Set A - Addition.



Set B - Subtraction.

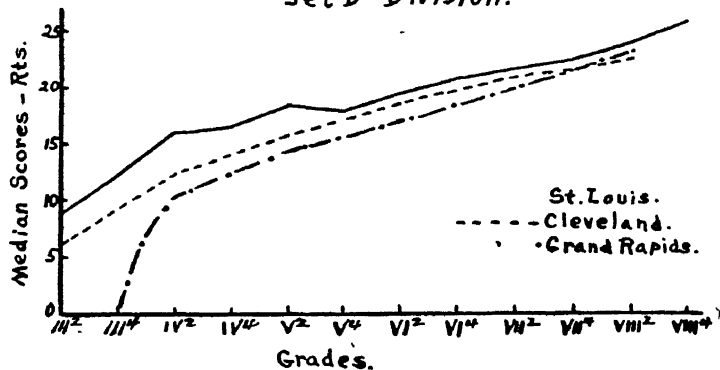


Set C - Multiplication.

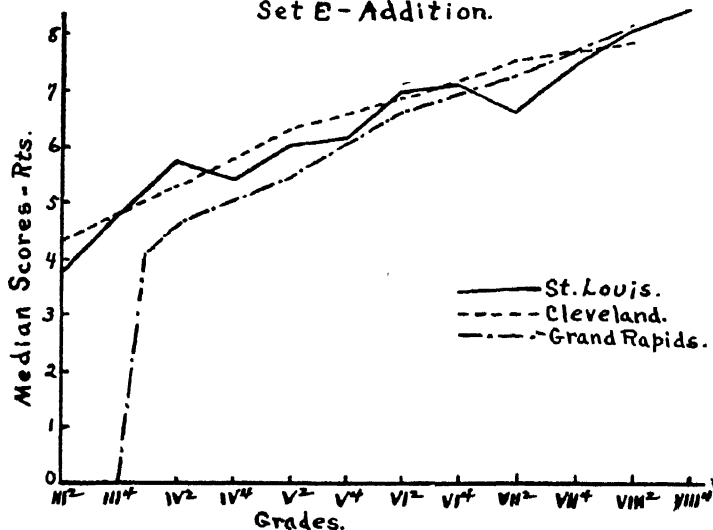


GRAPH VI

Set D - Division.



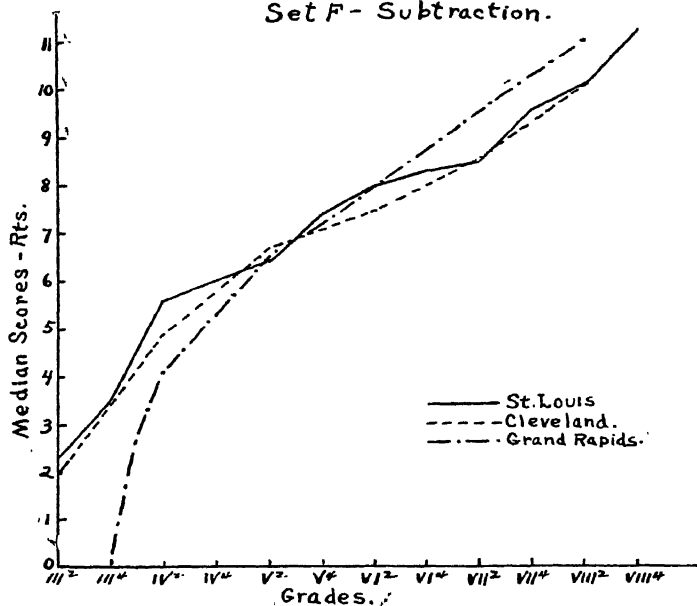
Set E - Addition.



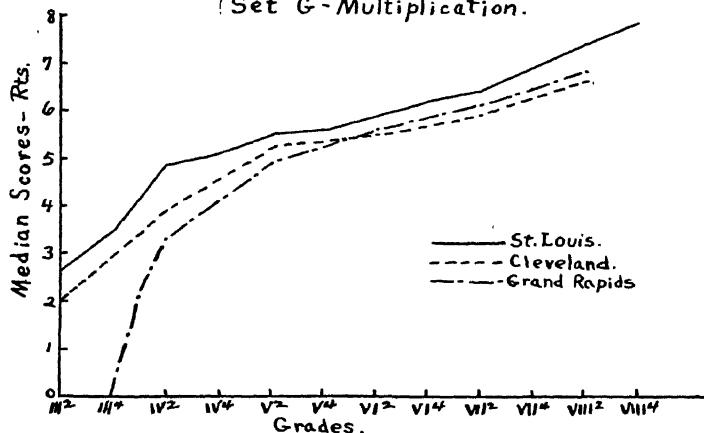
ARITHMETIC
GRAPH VI—Continued

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Set F—Subtraction.

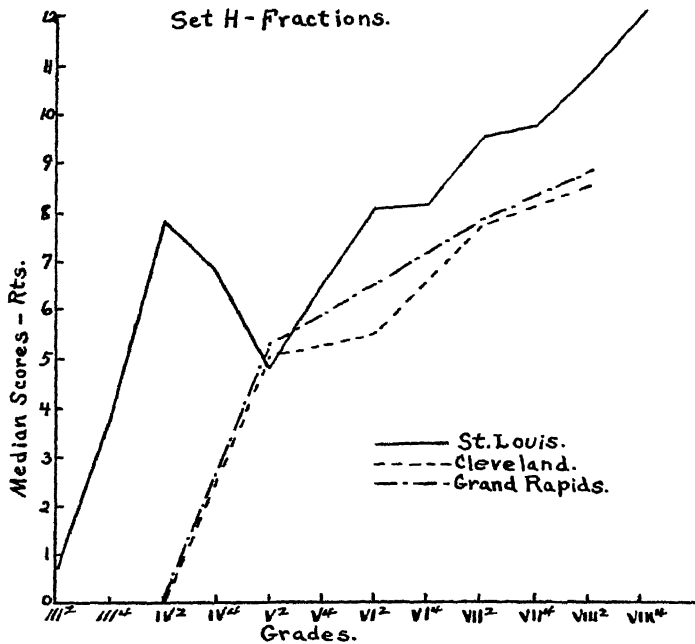


Set G—Multiplication.

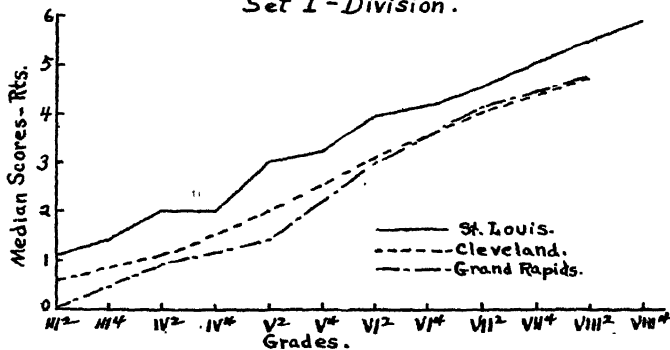


GRAPH VII

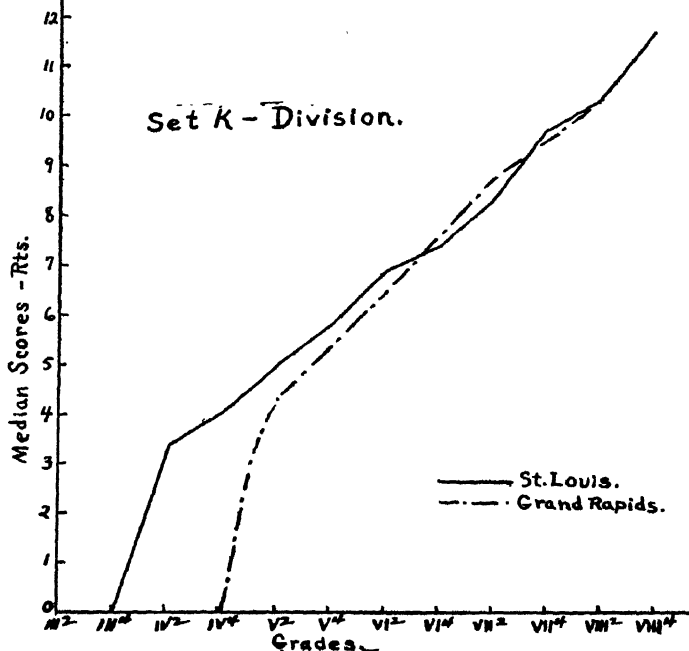
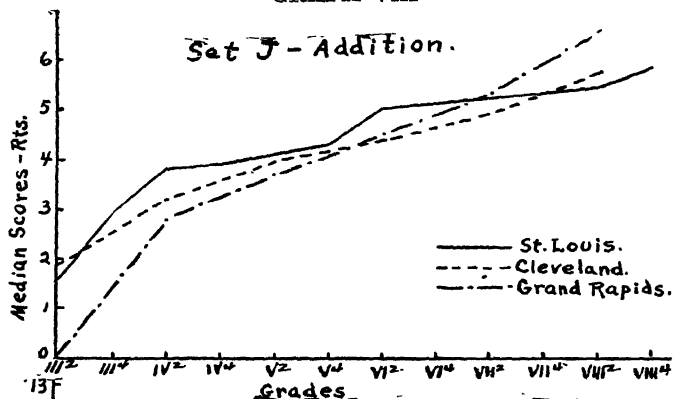
Set H - Fractions.



Set I - Division.

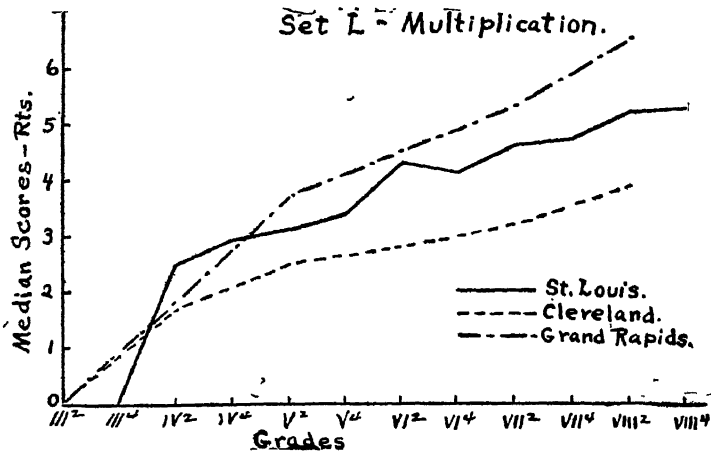


GRAPH VIII

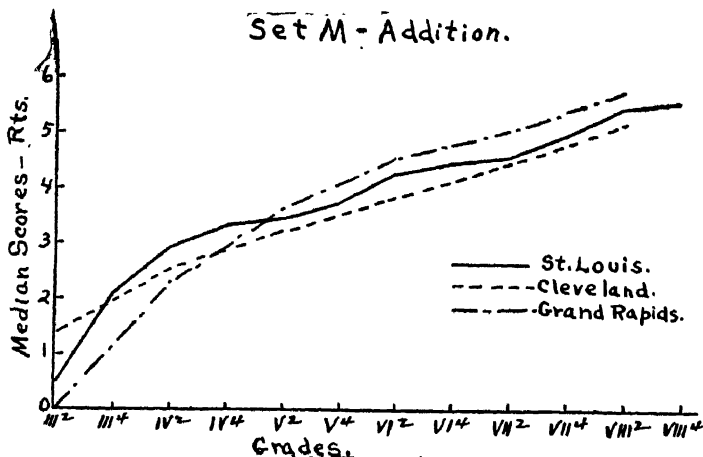


GRAPH IX

Set L - Multiplication.

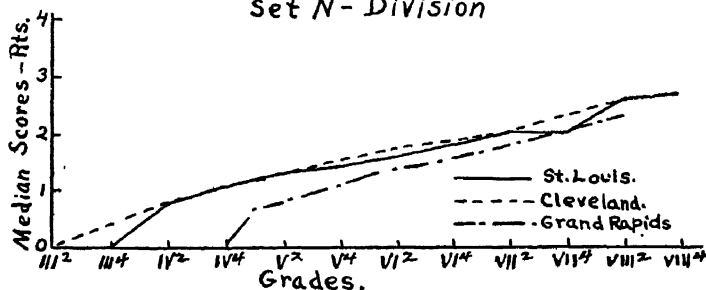


Set M - Addition.



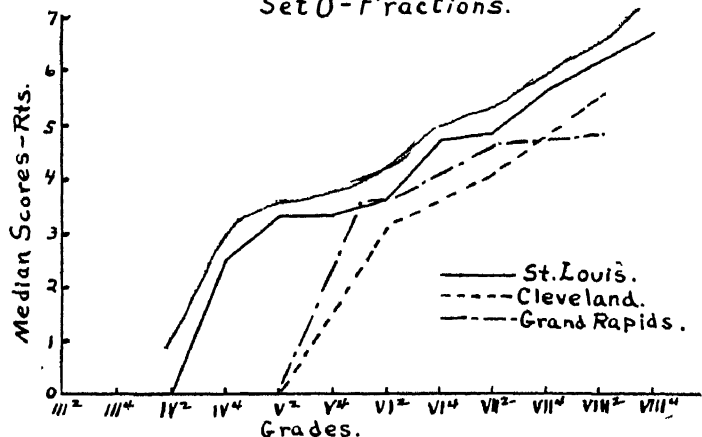
GRAPH IX—Continued

Set N—Division



GRAPH X

Set O—Fractions.



RECOMMENDATIONS

It is recommended that standards of achievement in the St. Louis schools be established from time to time by series of tests of the type represented by this single test.

It is further recommended that supervision of the individual schools be based in large measure on such objective comparisons as can be made through such tests.

Finally, attention is drawn to the fact that the course of study in the various grades should give heed to the capacities of children as shown in the comparative scores. There should be an adjustment of requirements to the ascertained ability of the pupils. Thus as shown in Graph. I, Section A, the V—4 grade is not making proper progress. In Graph. I, Set B, grade IV—2 is seriously out of line. In each of these cases an analysis should be made of the course of study.

By way of practical reorganization to make possible such testing and tabulating it is recommended that the principals be given clerical assistance to the extent of an hour a day and the central office be given about one-quarter of a year's time of a statistical clerk.

CHAPTER XIV

HANDWRITING

BY FRANK N. FREEMAN

*Summary*¹

This chapter presents the results of a series of tests in handwriting. The pupils in a number of schools wrote for two minutes and the rate and quality of their writing was measured.

Variations appear in the different schools. The balance between speed and quality is very different in different schools.

In general the pupils of St. Louis write with superior fluency. The quality is not high in the lower grades but is high in the upper grades. This shows that the main emphasis in the lower grades is on fluency rather than rigid form.

The closing paragraphs of the report are devoted to a discussion of tests as a means of detecting individual differences and dealing with them.

¹ By Chas. H. Judd.

HANDWRITING

The present system of teaching handwriting in St. Louis was organized several years ago under the direction of the present supervisor, Mr. Walker, for the purpose of improving the writing, which was regarded as of low quality. The writing system at that time in use was the vertical method. The present arm-movement slanting style of writing was introduced on the recommendation of the supervisor. It is not unlike in general characteristics the style which is in wide use throughout the country. It emphasizes arm-movement drill from the beginning of the third grade. Finger movement is definitely used in the first three grades, and the extension of directed finger movement to the fourth grade is being considered. The definite adoption of finger movement is recent and may not have yet had much effect on the writing. The writing is also lightened for the children in the first three grades by allowing them to use the pencil instead of the pen. Another means of alleviating the difficulty of writing for the young child—the use of large script—has been adopted to a moderate degree.

The supervision and organization of the teaching of writing is very carefully planned and worked out. The children in each room are classified into two writing sections independently of their general classification, and each section is taught separately. This releases some of the writing time of each section for other work.

The time allowance for writing is above the median for larger cities. The St. Louis allotment, in terms of minutes per week is as follows:

Grades I-III	80
Grades IV-VI	120
Grades VII-VIII	60

The average is 90 minutes per week.

The median of general practice is 75 minutes per week; thus the time devoted to writing in St. Louis is 20 per cent more than the median. Since, however, the practice of teaching the two divisions of a room separately releases some of the handwriting time for other work, it seems likely that the time actually used for writing is not above the median.

The greater part of the teaching of penmanship is done by the grade teachers, under the detailed supervision of the seven assistant supervisors. Each assistant supervisor, with the exception of one who teaches also in the Teachers' College, has charge of the penmanship in from thirteen to twenty-one schools, and each room is visited by a supervisor once in six weeks. During these visits the supervisors present to the children the advance material and observe the teacher's work.

This report will examine the general efficiency of the penmanship teaching and will consider particularly the value of the supervisory system. To gather data to serve as a basis for such an examination, a handwriting test was made in eighteen schools, chosen so as to obtain representatives from different districts and from the groups assigned to the various assistant supervisors. The results of this test will be examined with reference to a comparison of the attainment of the children in St. Louis and in other systems, and with reference to the comparative attainment of the various schools within the system.

The test consisted of two parts, a formal writing test, and a test of the writing in composition. In the formal writing test the children were instructed to write "as well as they could and as rapidly as they could" certain uniform selections, suited to their grade, which had been memorized in preparation for the occasion. They were permitted to write just two minutes by the watch. This test was given by the assistant supervisors after careful instruction. In the composition test nothing was said to the children to indicate that their writing was to be examined. The papers of both tests were carefully judged as to form by Mr. S. F. Brown

who has had a great deal of special training in this work. He also calculated the speed.

The results of the test in each grade in each of the eighteen schools are presented in Table I. This table is to be read as follows: In school A, the average speed of the second grade was 40.0 letters per minute. The average rank of the formal writing test represented in the column headed F W. was 29.2. The average grade of the composition tests was 27.1, represented in the column headed F C. The grades in form in columns F W and F C are in terms of the Ayres' handwriting scale. The averages for the eighteen schools in each grade are represented at the bottom. In the case of the formal writing tests, the average attainment was also made up in a different manner, namely, by plotting the total distribution of scores in each grade, and then calculating the averages. These averages are represented in the lowest line. They are substantially the same as the averages calculated in the other manner, and the divergence may be explained by the fact that the averages in this table are carried out to only one decimal point. The averages based upon the total distribution of grades are the ones used in the charts.

The general results are presented in comparison with the results that were obtained from tests made in fifty-six cities in Charts I and II. In Chart I the comparison is made between the form in St. Louis and in fifty-five cities; and in Chart II the comparison is made with reference to speed. In the case of the score in form the papers from the comparative cities were graded by Mr. Brown, who also graded the papers from St. Louis. It is evident from an inspection of the charts that the St. Louis system, as a whole, stands high in comparison to the general practice. In form, it is somewhat inferior in the three lowest grades which were studied, but it is superior in the upper two grades. In speed it is superior in all of the grades except the eighth, in which it equals the standard.

TABLE I.
SCORES OF THE INDIVIDUAL SCHOOLS

Grade School	II		III		IV		V		VI		VII		VIII	
	S	FW FC	S	FW FC	S	FW FC	S	FW FC	S	FW FC	S	FW FC	S	FW FC
A . . .	40.0	29.2 27.1	43.0	30.8 30.4	68.3	35.7 36.7	74.6	45.0 42.9	73.7	62.2 62.9	79.2	69.2 67.9	74.2	80.0 79.6
B . . .	34.6	26.7 22.5	57.0	27.9 25.4	59.4	31.7 28.7	62.9	45.0 44.6	77.2	52.5 51.7	72.8	52.9 50.0	69.0	66.1 63.2
C . . .	22.7	30.4 30.8	52.0	30.0 28.8	57.9	32.5 31.7	60.2	41.7 42.1	66.0	37.1 36.7	81.5	52.9 56.7	69.1	82.9 80.0
D . . .	34.2	33.7 30.4	61.9	31.3 30.4	74.4	27.5 23.7	63.3	50.0 46.7	73.2	47.9 49.6	81.7	60.0 63.3	58.3	78.3 76.3
E . . .	35.7	31.7 30.0	61.1	32.1 33.7	62.4	34.6 31.7	64.7	47.5 46.3	68.3	58.3 55.4	74.0	54.6 54.2	78.8	72.5 73.7
F . . .	40.3	27.9 26.7	55.3	34.6 33.7	79.2	45.4 42.9	68.1	57.1 56.7	74.4	55.8 56.8	65.0	55.0 54.2	81.8	77.1 75.4
G . . .	41.3	30.4 26.7	52.5	34.6 32.5	62.2	30.4 30.4	68.7	43.7 42.9	63.6	54.2 54.2	67.1	57.9 59.2	69.2	62.1 62.5
H . . .	35.2	30.0 27.9	59.8	32.1 34.6	62.0	45.8 45.4	57.1	47.9 46.3	84.5	62.1 58.7	76.6	67.5 65.8	86.3	81.7 77.9
I . . .	24.5	31.2 28.1	64.5	32.1 29.2	57.1	42.9 39.0	56.3	65.2 62.9	50.6	74.0 69.3	....	....	....	....
J . . .	38.0	28.7 27.1	58.1	24.6 27.5	64.9	31.7 30.8	78.4	39.6 43.3	62.8	44.2 43.7	66.3	61.7 65.4	42.8	71.7 67.1
K . . .	32.1	31.7 29.6	61.4	27.5 30.4	68.7	32.1 27.5	66.9	39.2 37.1	77.4	57.9 58.3	77.7	67.1 69.2	90.8	69.2 68.3
L . . .	36.1	27.1 27.1	59.2	28.7 30.4	57.9	29.2 27.1	67.5	36.3 34.2	69.5	52.9 50.4	82.2	62.1 61.7	83.1	69.6 66.7
M . . .	39.5	29.7 25.4	58.1	35.0 32.9	61.9	33.7 31.3	59.2	40.0 40.4	69.0	57.1 57.1	74.3	54.2 50.4	74.1	60.0 55.2
N . . .	40.5	29.6 27.9	62.3	31.3 31.7	85.1	34.6 33.3	87.1	62.9 64.2	....	....	78.1	67.7 66.2	73.8	75.0 75.4
O . . .	39.2	32.5 32.1	41.5	35.4 31.7	50.7	52.5 48.7	55.1	68.3 66.7	61.9	72.1 65.4	72.1	75.4 73.7	80.4	77.9 75.4
P . . .	54.1	29.4 30.6	55.9	35.4 37.1	62.9	41.3 43.7	65.8	61.7 56.7	66.0	69.2 66.0	62.3	75.4 73.3	70.6	78.7 78.7
Q . . .	37.3	34.6 31.3	55.5	27.5 27.9	60.2	39.6 33.3	64.5	45.4 42.9	72.7	65.4 60.8	78.2	77.1 74.6	65.9	83.3 81.9
R . . .	38.1	28.3 26.7	59.2	42.9 37.1	56.8	40.8 38.7	54.9	52.1 46.3	63.0	58.9 57.9	....	....	64.8	75.4 72.1
S . . .	32.8	25.7 25.8	60.3	28.7 29.6	63.1	36.7 35.8	71.4	52.1 53.7	73.2	50.0 49.2	81.5	57.5 59.6	76.7	75.4 73.7
AVG....	36.7	29.9 28.1	56.8	31.7 31.3	64.0	36.8 35.3	65.6	52.1 48.3	69.3	57.3 55.7	74.7	62.8 62.7	72.8	74.2 72.4
	29.9*		31.8*		36.7*		49.4*		57.0*		63.4*		74.3*	

* Average based on distribution of scores by grades.

S=Speed. FW=Form in Writing Test. FC=Form in Composition Test.

To make possible a comparison with another system which has been extensively tested and which uses much the same method of teaching as St. Louis, the results from a survey of the handwriting in Grand Rapids are presented in Charts III and IV. Several similarities between the two systems may be noted. In form both are below the standard in the lower grades, and superior in the upper grades. In speed, both are above the general average in most of the grades.

The point of particular interest in both St. Louis and Grand Rapids is the common inferiority to the general average in quality in the lower grades. This is an illustration of the fact that there are two rather distinct kinds of practice with reference to these grades. In the one case, the children

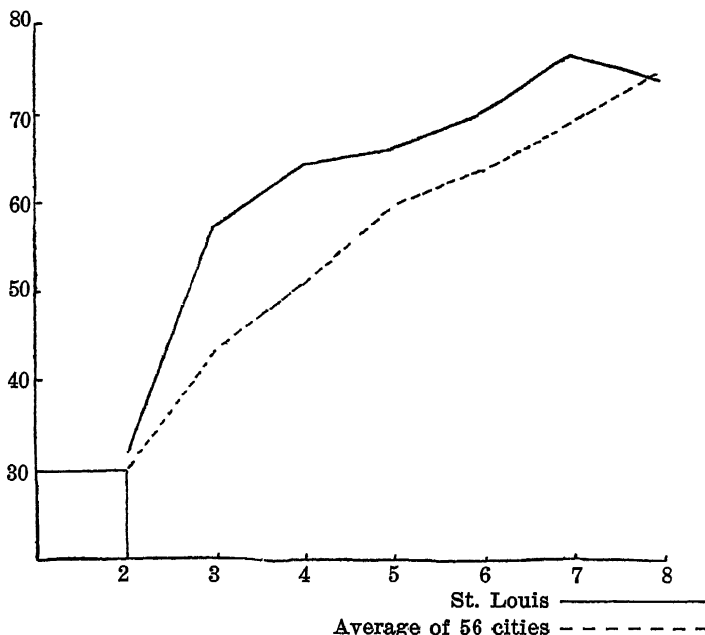


Chart I. Comparison of the speed in St. Louis and in 56 cities.

are encouraged to write with a fairly high degree of speed, and a relatively low standard of form is tolerated. In the other case, their attention is directed more largely to form,

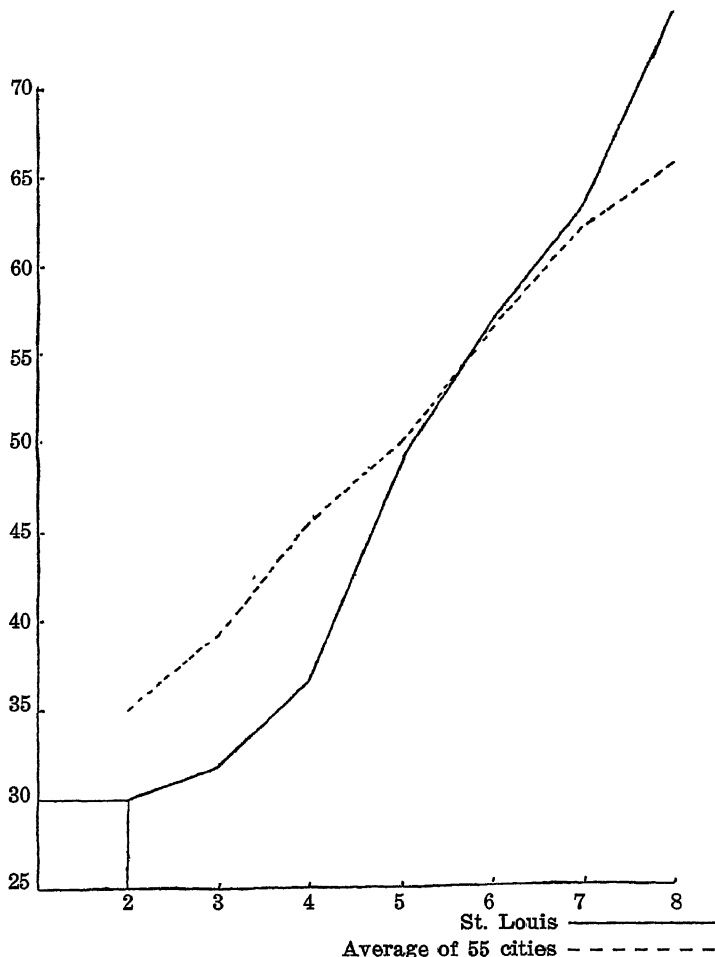


Chart II. Comparison of form in St. Louis and in 55 cities.

and the speed is not so great. It is argued in support of the one type of practice that the essential for the beginner in writing is to attain fluency and the correct type of movement, and that the form will develop after the proper movement habit has been formed. The contention in support of the opposite practice is that the prime requisite at the beginning is to develop the proper idea of the form of letters and care in making them, and that after this is done speed will naturally develop. It is also possible to pursue an intermediate course between these two extremes. The result of such

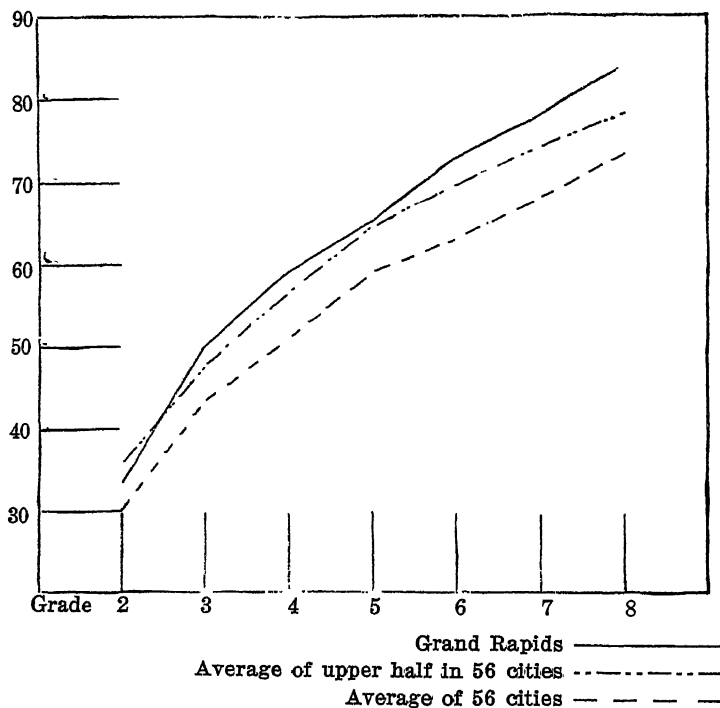


Chart III. Comparison of the speed of writing in Grand Rapids and in 56 cities.

a course is what is represented by the average of general practice shown in the chart, for this average is secured by putting together cities which follow both plans.

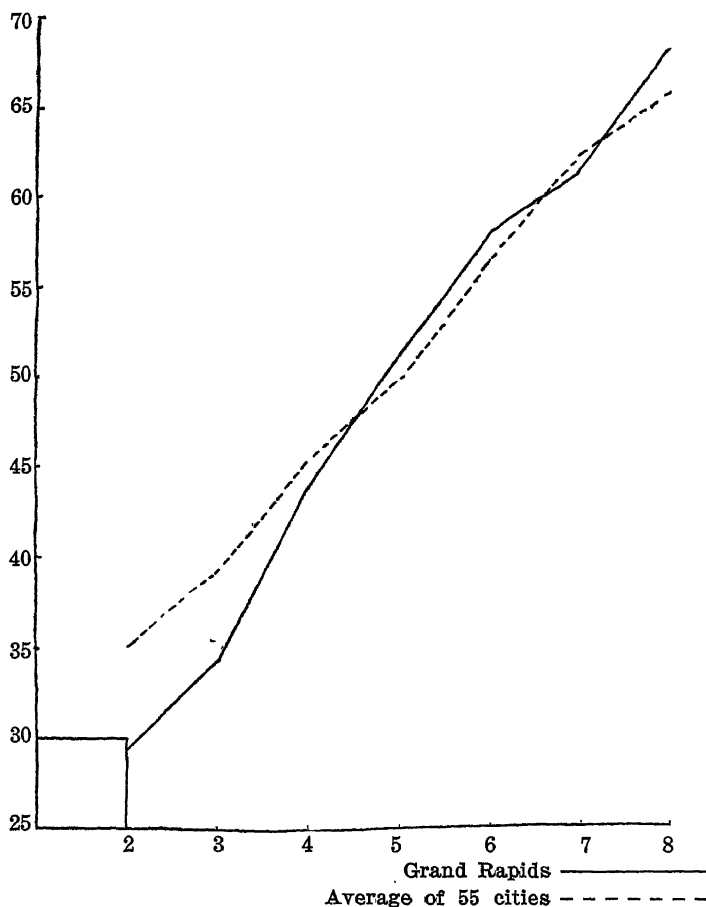


Chart IV. Comparison of the form in Grand Rapids and in 55 cities.

The inference may perhaps be drawn from the fact that a modification is being made in the method of writing which is taught in the lower grades, that the St. Louis system is working toward the development of somewhat better form with less emphasis upon movement drill in the lower grades. While the aim which is behind the introduction of finger movement in these grades in place of arm movement is better to adapt the writing to the younger children, the consequence of this change is likely to be a somewhat greater emphasis upon form as compared with speed. While no dogmatic judgment can be passed upon this question, it seems probable that a development in this direction is desirable.

The relation between form and speed in the successive grades is peculiarly well brought out in another type of chart. This relation is shown for St. Louis in Chart V and a comparative chart from Grand Rapids in Chart VI. These charts are constructed by plotting the position of each school grade with relation to both form and speed by a single point. By connecting the points representing the successive grades, the type of progress in the two related characteristics may be seen. It appears that in St. Louis the progress in speed is made chiefly in the lower grades, and the progress in form in the upper grades; while in Grand Rapids the progress is more evenly distributed between the two elements throughout the whole system. This indicates that while both systems give a relative emphasis to speed in the lower grades, this is done even more strongly in St. Louis than in Grand Rapids. It would be well to make a deliberate experiment for the purpose of comparing the desirability of the two kinds of emphasis, adding possibly a third type in which the emphasis is largely upon form in the lower grades. In the absence of such comparative experiments the probability is in favor of the course which maintains a fairly even balance between the two characteristics.

Recent investigation has shown that there is a very surprising degree of spread in the scores of individual children

of the same school grade in all of the school subjects which have been tested. While no extensive data with regard to the amount of this spread in handwriting are at hand, a comparison may be made in this respect between St. Louis and Grand Rapids. In Tables II and III the number of children receiving each of the various scores in the different grades is shown, and at the right of the table the average for each grade and the amount of spread in the scores for each grade.

Form

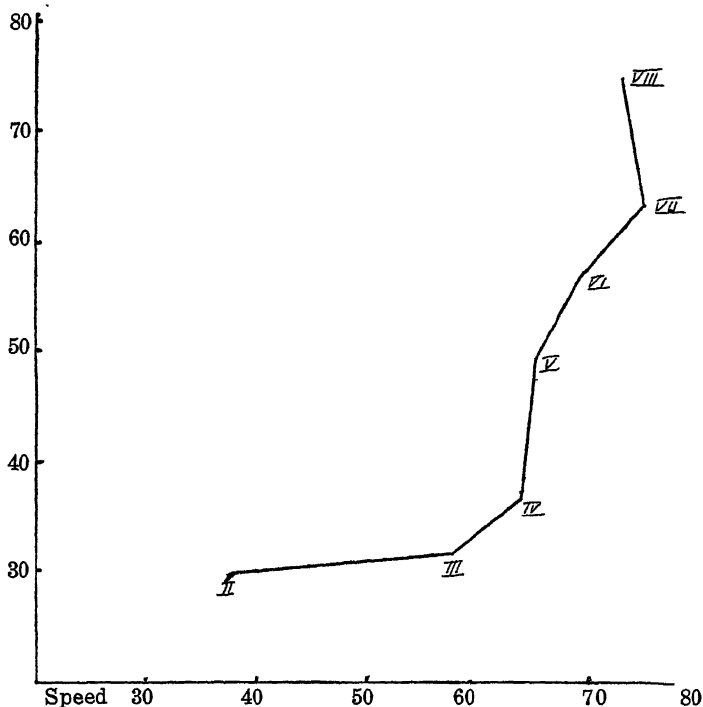


Chart V. Progress in speed and form in St. Louis shown by the two co-ordinate method.

These tables are to be read as follows: In Table II, it is shown that in St. Louis there were 67 children in the second grade who received the score of twenty, 316 children who received the score of thirty, and 52 children who received the score of forty, etc. The total number of children of the second grade who were tested was 439. The average of their scores were 29.9. The lowest score of the middle half of the children of the second grade was 26.4, the highest score, 33.3, and the difference between the lowest and the highest of the middle half of the children of this grade was 6.9. This difference is known as the quartile range. The quartile range increases rapidly up to the fifth and sixth grades, in which it is 21.2, and 21.9, respectively, and then decreases to the eighth grade, in which it is 13.9. The average quartile range for St. Louis is 15.2, and for Grand Rapids, 17.9.

Form

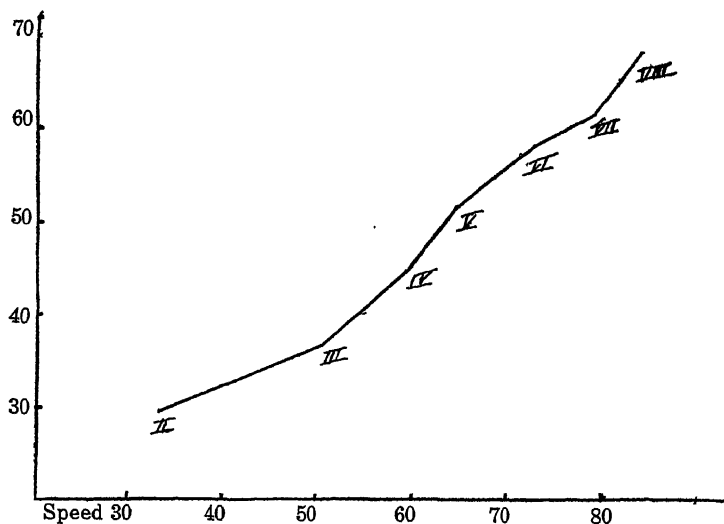


Chart VI. Progress in speed and form in Grand Rapids as shown by the two co-ordinate method.

TABLE II

THE DISTRIBUTION OF THE SCORES BY GRADES IN ST. LOUIS

Quality	20	30	40	50	60	70	80	90	Total Average	Quartile Range
2nd grade ..	67	316	52	3	1	...	...	...	439	26.4—33.3=6.9
3rd grade ...	70	257	92	19	7	...	...	...	445	26.6—35.8=9.2
4th grade ...	37	202	124	54	27	5	1	...	450	28.7—43.0=14.3
5th grade ..	6	73	105	118	86	40	25	...	453	38.2—59.4=21.2
6th grade ..	1	20	69	95	95	80	42	4	406	46.2—68.1=21.9
7th grade ..	...	7	27	71	112	96	68	17	398	54.3—73.5=19.2
8th grade ..	...	1	6	10	53	143	175	55	443	67.9—81.8=13.9
Totals . . .	181	876	475	370	381	364	311	76	3034	—
									48.3	Average, 15.2

TABLE III

THE DISTRIBUTION OF THE SCORES BY GRADES IN GRAND RAPIDS

Quality	20	30	40	50	60	70	80	90	Total Average	Quartile Range
2nd grade ..	98	202	93	18	2	...	...	...	413	25.2—36.1=10.9
3rd grade ..	120	277	186	66	45	18	2	...	714	27.1—42.5=15.4
4th grade ..	29	155	161	117	89	63	21	4	639	33.5—56.9=23.4
5th grade ..	16	69	145	142	169	92	23	3	659	40.5—62.2=21.7
6th grade ..	2	24	87	147	202	134	26	2	624	47.9—65.4=17.5
7th grade ..	1	17	56	70	144	145	49	6	488	51.9—70.4=18.5
8th grade ..	...	6	24	59	101	129	80	17	416	56.5—74.5=18.0
Totals . . .	266	750	752	619	752	581	201	32	3953	—
									49.6	Average, 17.9

How far it is desirable to go in reducing the range in the scores of pupils of the same grade is a matter which admits of some difference of opinion, but it is clear that an extremely large range is undesirable. An extremely wide range indicates either that there are some children of a grade who do very poor work, or others who do very much better work than the average, or both. In the one case, there is a group of children who need more training, and at the other extreme there is a group whose attainment is sufficient, and who might better be spending their time at something else than drill in formal subjects. It, therefore, is a favorable indication that the quartile range in St. Louis is less than it is in the other city which is present for comparison.

The question may be raised whether the classification of the children in each room into two groups contributes toward the reduction of the range between the children in the grades. It is possible that it does so contribute, provided that this arrangement is taken advantage of so as to give the poorer children special drill. If it is simply a device for putting together the children who are more nearly like in attainment, however, it might act in the opposite way. Since the better children are together they can progress faster, and probably outstrip their slower companions, even though the slower group also progress faster than it would if combined with the better group. Some trial has been made in St. Louis also of a still more radical re-grouping of the children for their penmanship work. This was brought about by departmentalizing the upper grades in handwriting. This type of organization, like the less radical classification which is in force throughout the system, makes it possible to bring about larger uniformity in the attainment of the various individuals provided it is taken advantage of to allow the children of better attainment to use some of their handwriting time in other work, and to give the children who are poor in this subject, special training.

A comparison of the form of the writing in the formal writing test and in the composition test is shown in Chart VII. It appears that the children wrote almost as well in all of the grades, and fully as well in two of them, when their attention was upon the thought which they were expressing rather than upon the form of their writing. This indicates that the writing habit is not confined to the writing lesson, and is, therefore, an evidence of good instruction.

Before presenting typical results from individual schools in order to show variations in practice, it will be desirable to present evidence that the somewhat striking variations to be found are real variations, and are not due to inaccuracies in the grading. In order to give evidence that the variations are real, the papers in four schools were graded independently by the same person, and by two radically different scales. In addition to the regular grading by the Ayres' scale, these papers were also graded by the Freeman analytical scale. This scale requires that five individual scores be given to each paper, and that the final score be made up by the summation of these individual scores. If a set of papers is graded at different times by these two scales, there is no possibility that the memory of the scores given by one scale can effect the grading by the other one.

The results from the analytical scale in the four schools are shown in Table IV, and the comparison of the results by the two scales are shown in Charts VIII-XI.

TABLE IV

AVERAGE SCORES IN EACH GRADE IN FOUR SCHOOLS BY THE
FREEMAN ANALYTICAL SCALE

School Grade	II	III	IV	V	VI	VII	
B	10.9	11.1	13.9	18.1	19.0	18.1	22.0
G	12.1	13.6	11.5	16.6	19.4	19.6	20.5
L	12.8	13.1	14.1	14.6	18.4	19.6	22.5
O	11.3	14.0	16.4	21.4	23.4	23.0	23.9

Form

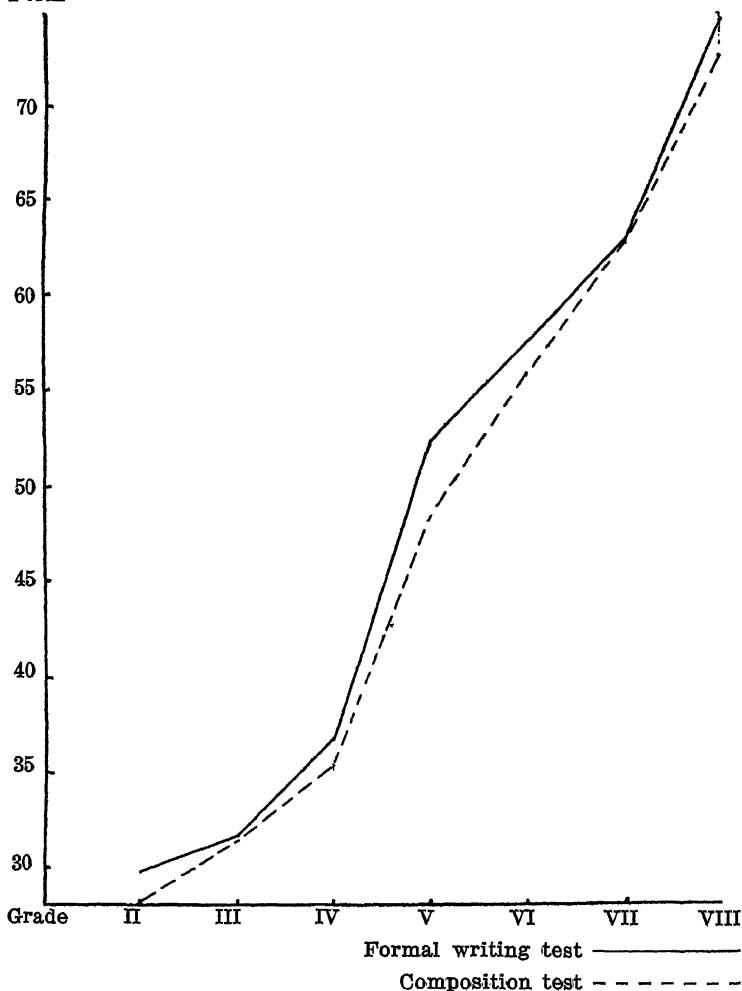


Chart VII. Comparison of the scores in the formal writing test and in the composition test.

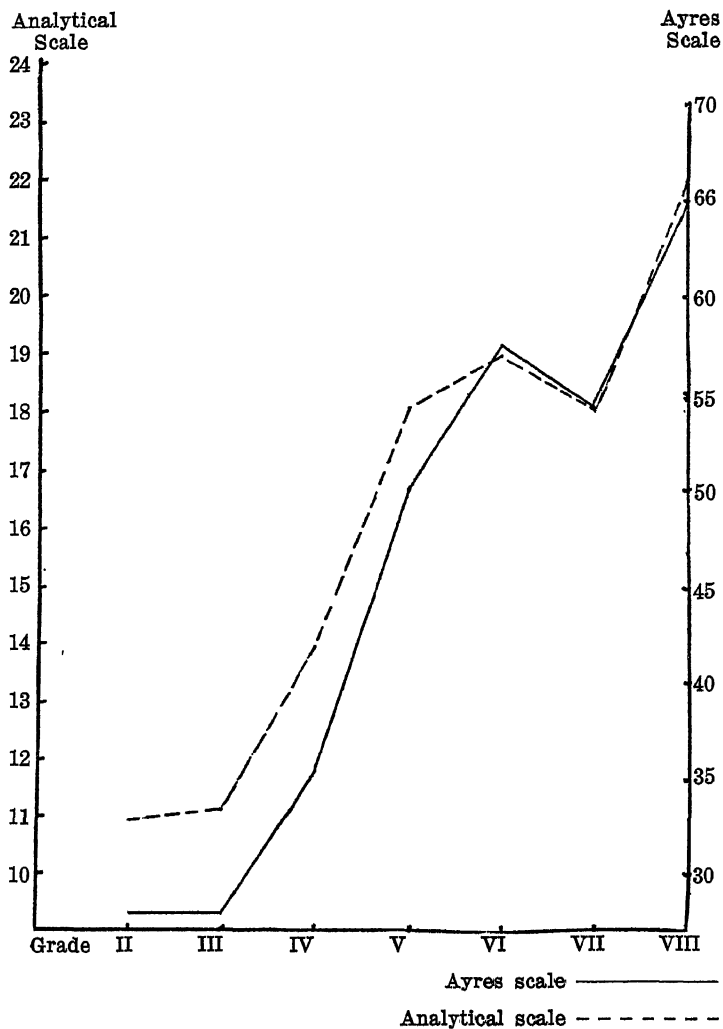


Chart VIII. Scores by two scales in School B.

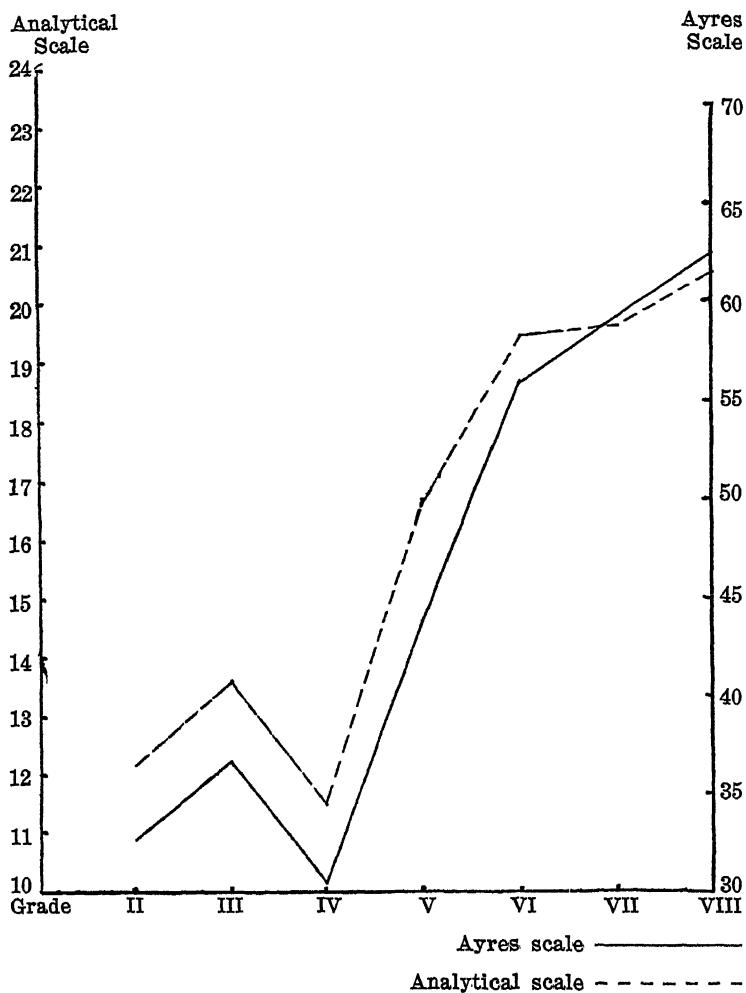


Chart IX. Scores by two scales in School G.

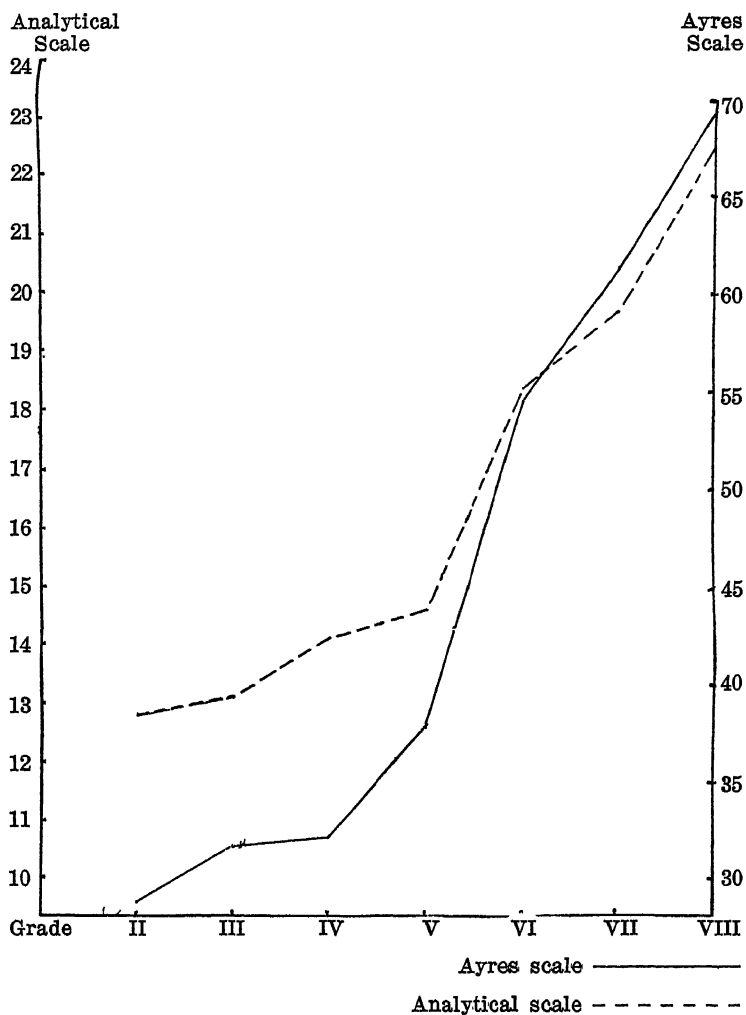


Chart X. Scores by two scales in School L.

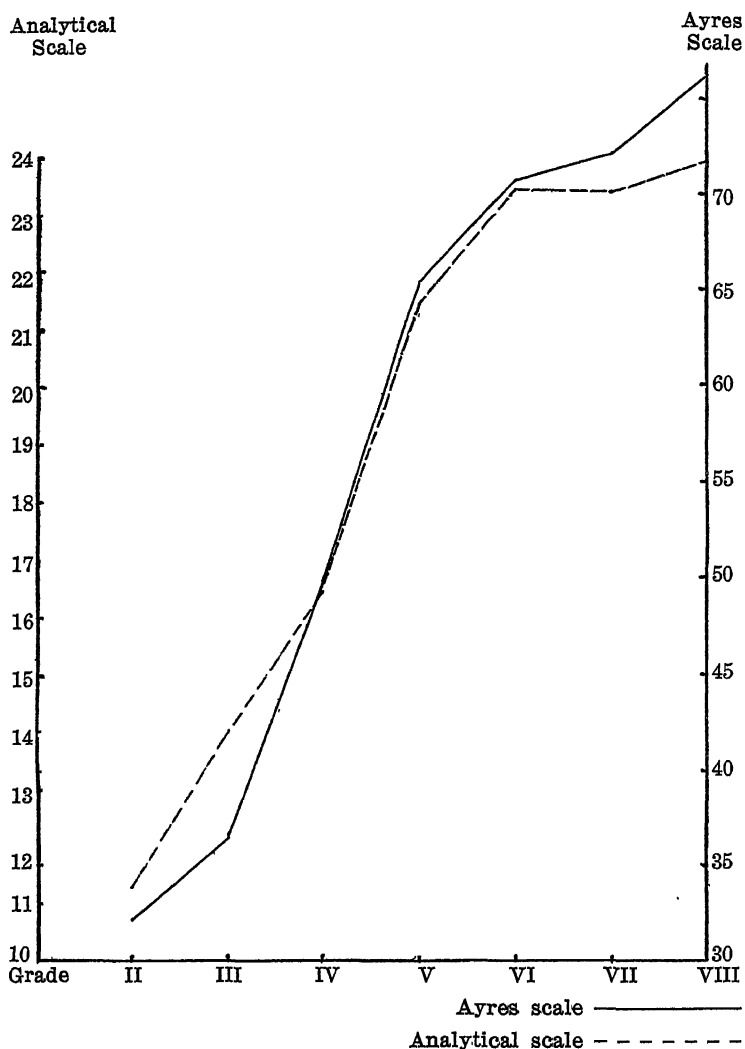


Chart XI. Scores by two scales in School O.

It will be noted that the grades given by the analytical scale are relatively somewhat higher than those by the Ayres' scale in the lower grade, and that this is uniform for the four schools. Disregarding this difference, which is not essential to the question at hand, it is evident from the chart that the *fluctuations* in the scores of the successive grades are very closely similar in the records from the two scales. Compare, for instance, the striking fluctuation in the fourth grade of school G, shown in Chart IX. There can be no possibility that this drop at the fourth grade is due to errors of grading, since it is identical in the scores of the two charts. This makes it possible to speak with confidence in regard to the fluctuations which are about to be shown in the individual schools.

The efficiency of work in a school system is to be judged not simply by comparisons with other systems, but also by comparisons within the system itself. Charts XII-XIX exhibit the results of the tests in eight schools, by showing the scores in speed and form in the formal writing test in comparison to the standard score; and Charts XX-XXIII show the relationship between speed and form by the single graph method. It is apparent at a glance that a very wide variation exists in the practice in the different schools. Compare, for example, the speed progress in schools O, P and H, Charts XIV, XV and XVII. Note also the erratic character of the speed changes in the schools F and D, Charts XII and XVI. While variations in the progress in form are not quite so striking, the differences are very radical. Compare, for example, schools F, K, O and M, in Charts XII, XIII, XIV and XVIII. There is large difference both in the manner of progress from grade to grade and in the final attainment. Radical differences in the progress curve showing the relation between speed and form are shown in Charts XX-XXIII. In school O, for example, contrary to the general practice in the system, the rapid progress in the lower grades is in form and in the upper grades is in speed. In

school P, Chart XXI, there is very little progress in speed from the lower grades to the eighth, the progress being chiefly in form. In schools D and I, Charts XXII and XXIII, the relationship between the two characteristics is very erratic.

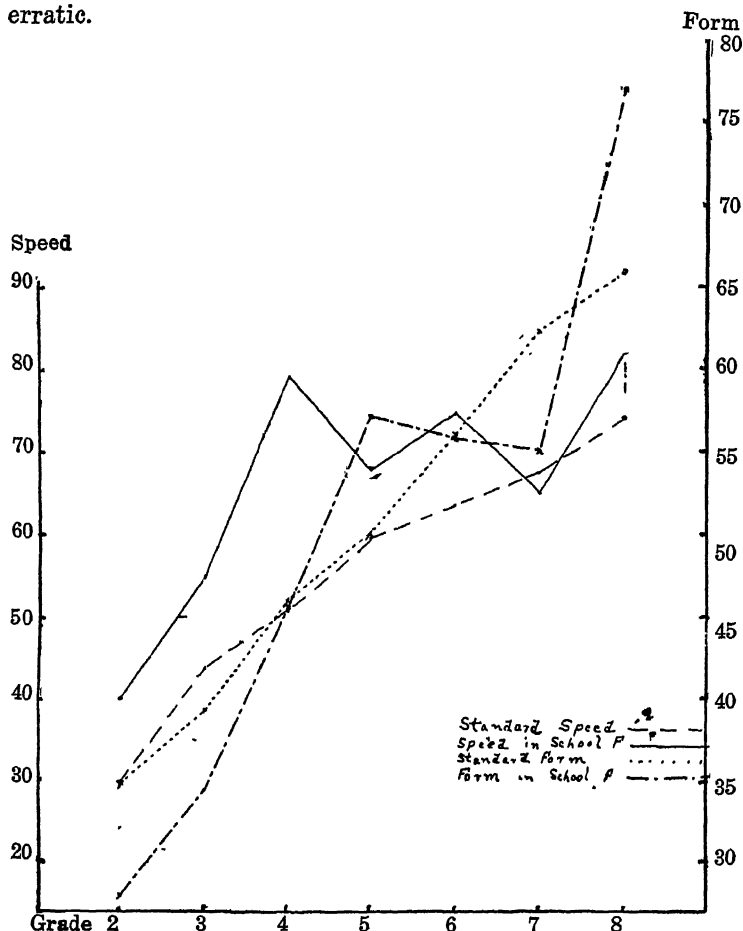


Chart XII. School F.

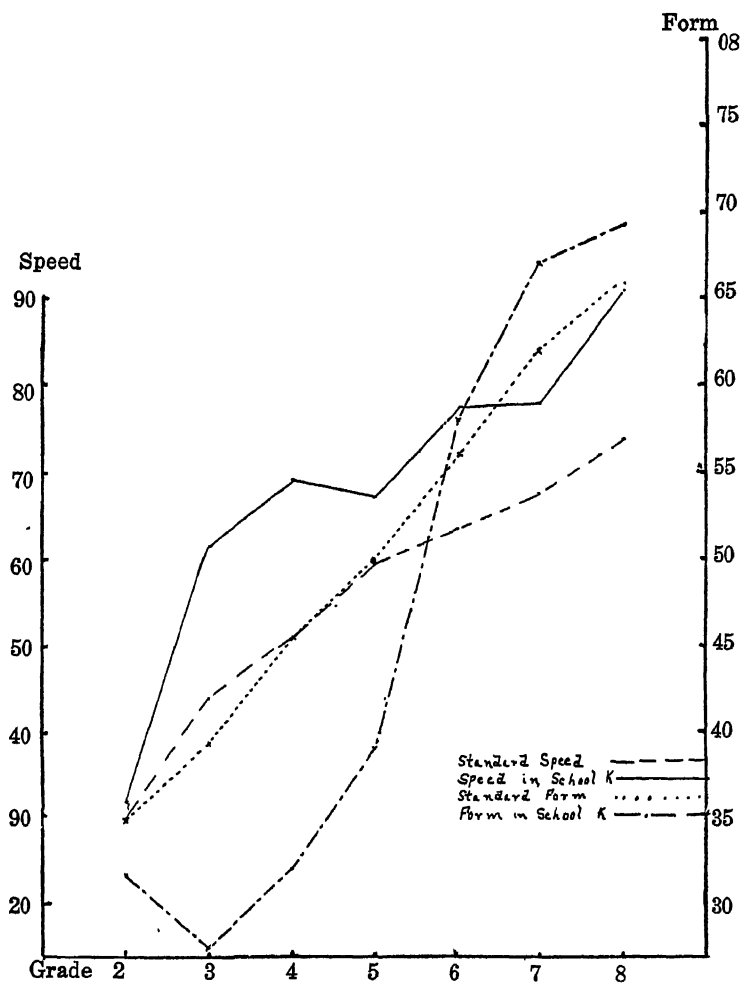


Chart XIII. School K.

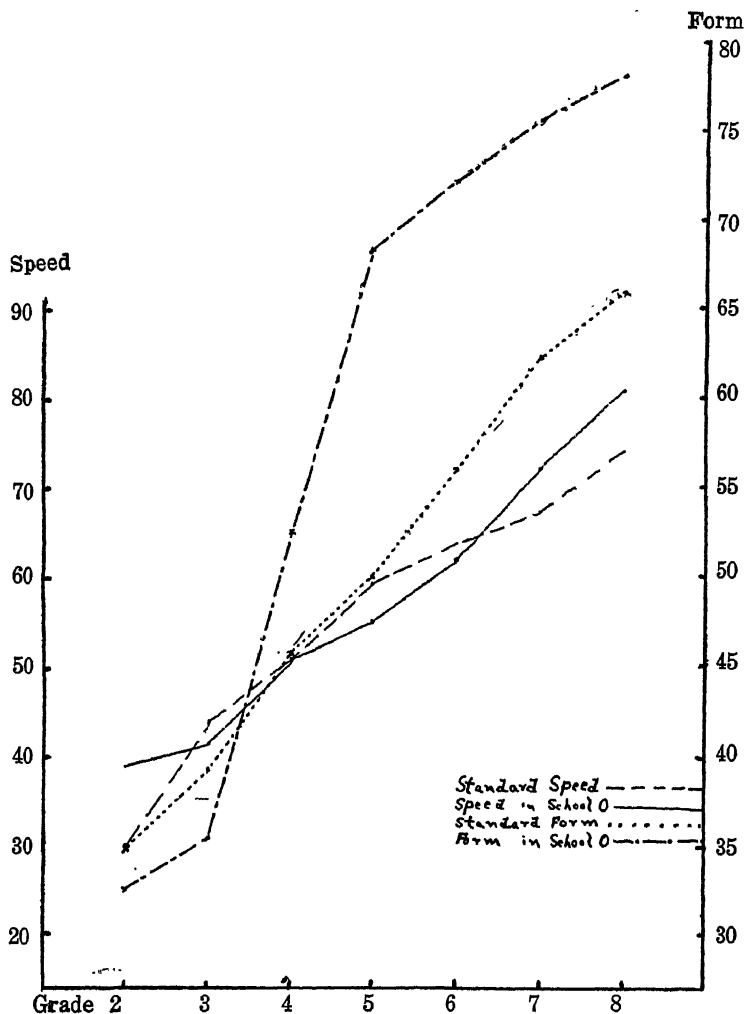


Chart XIV. School O.

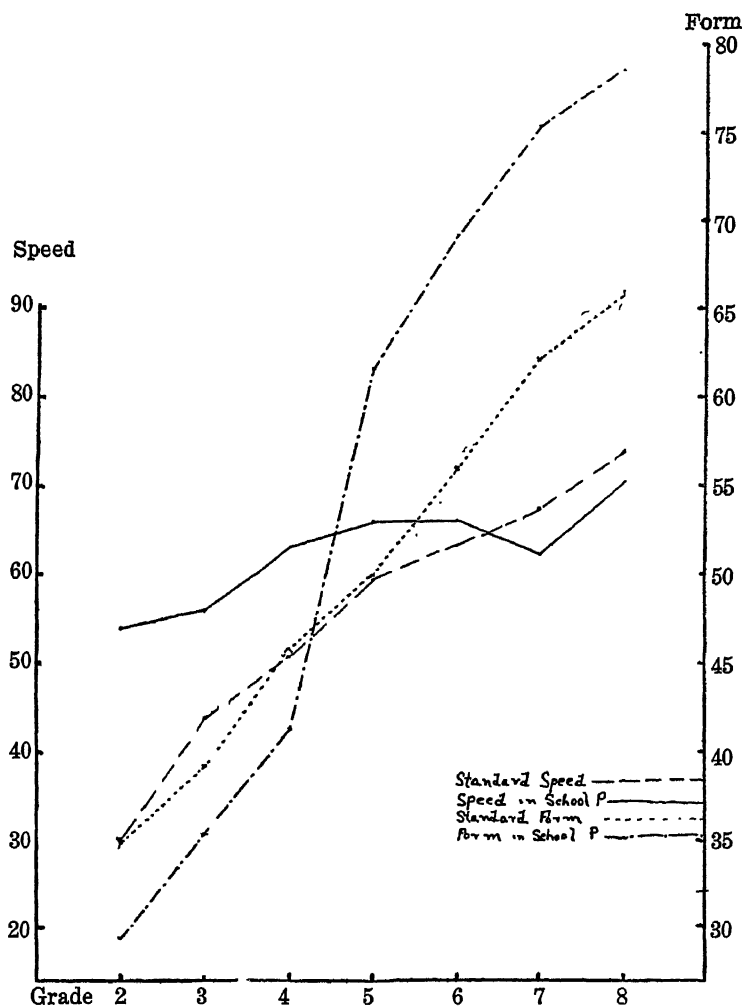


Chart XV. School P.

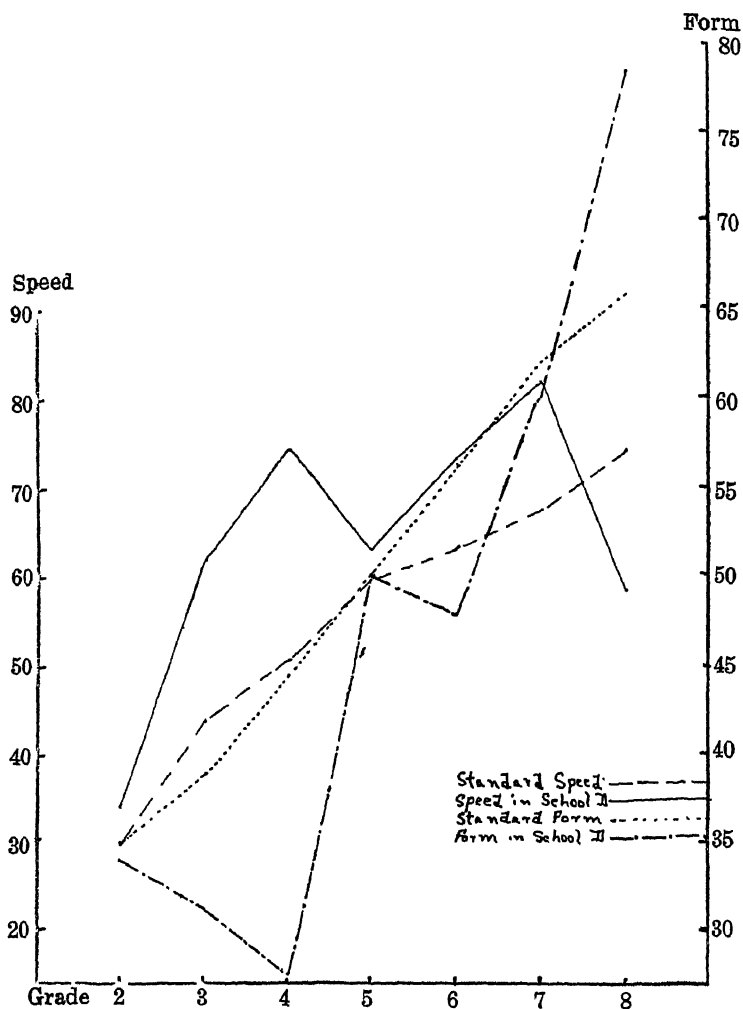


Chart XVI. School D.

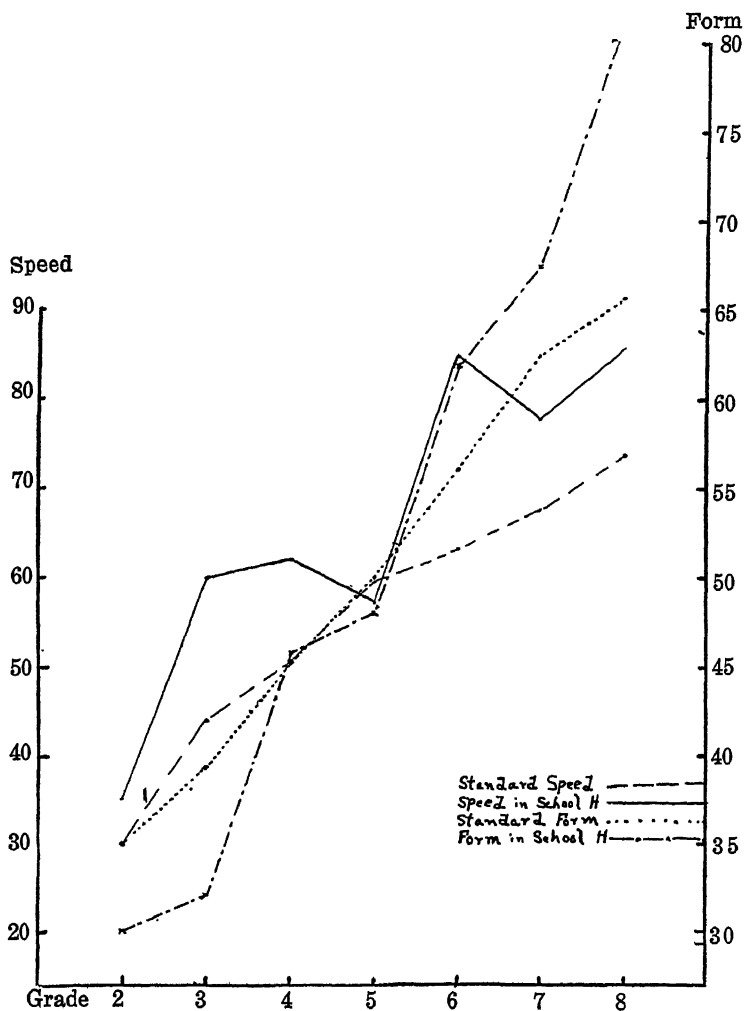


Chart XVII. School H.

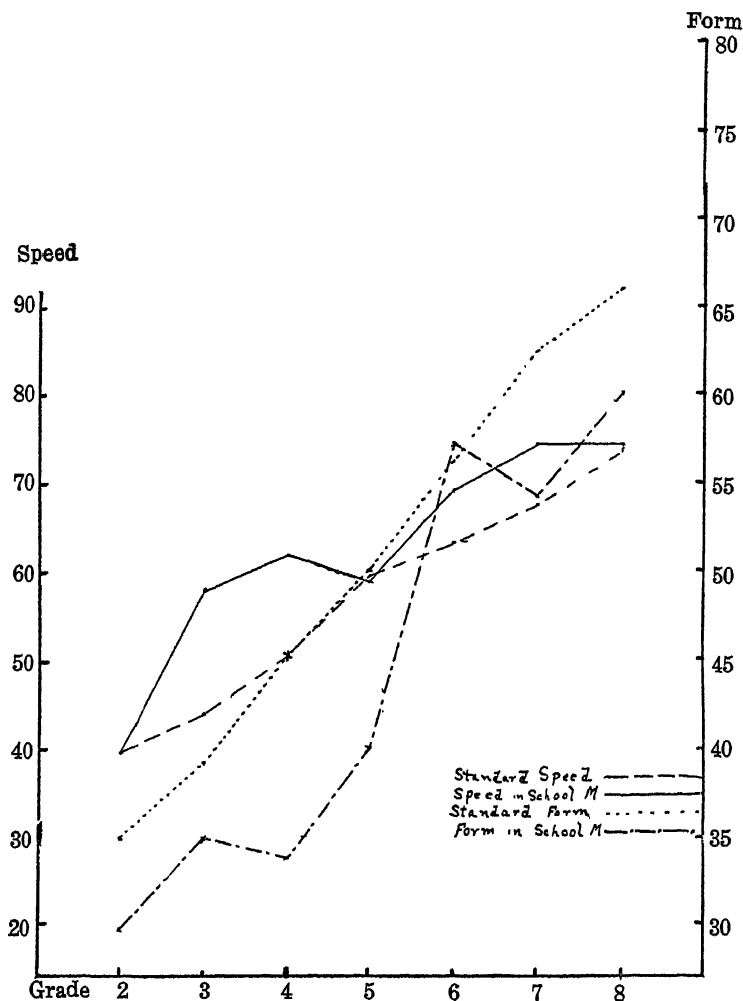


Chart XVIII. School M.

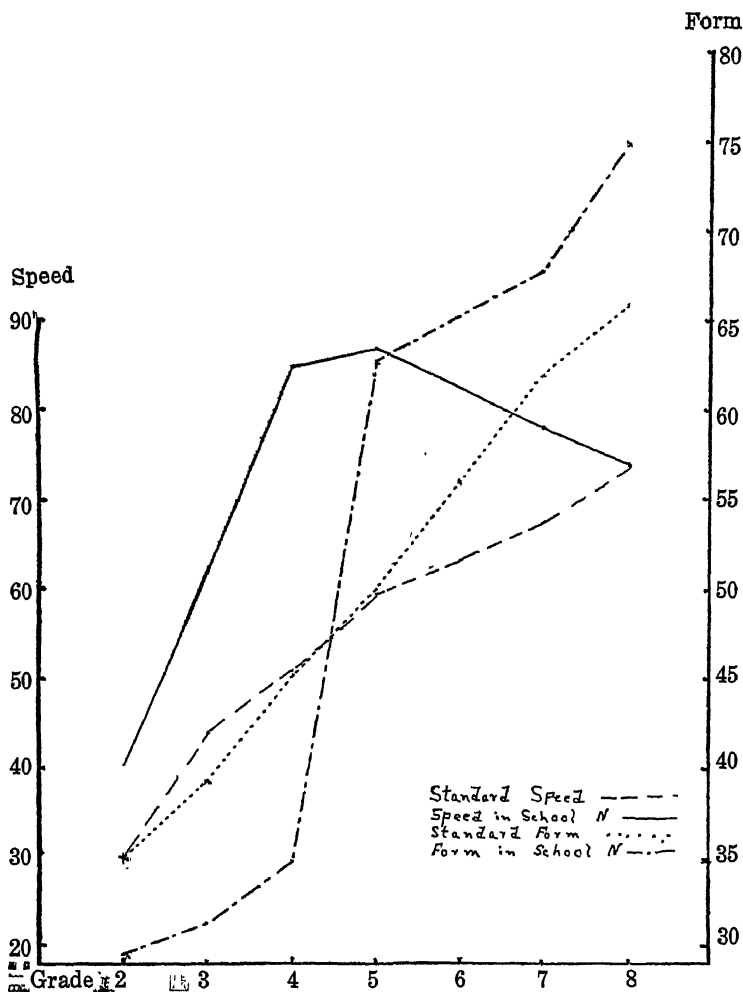


Chart XIX. School N.

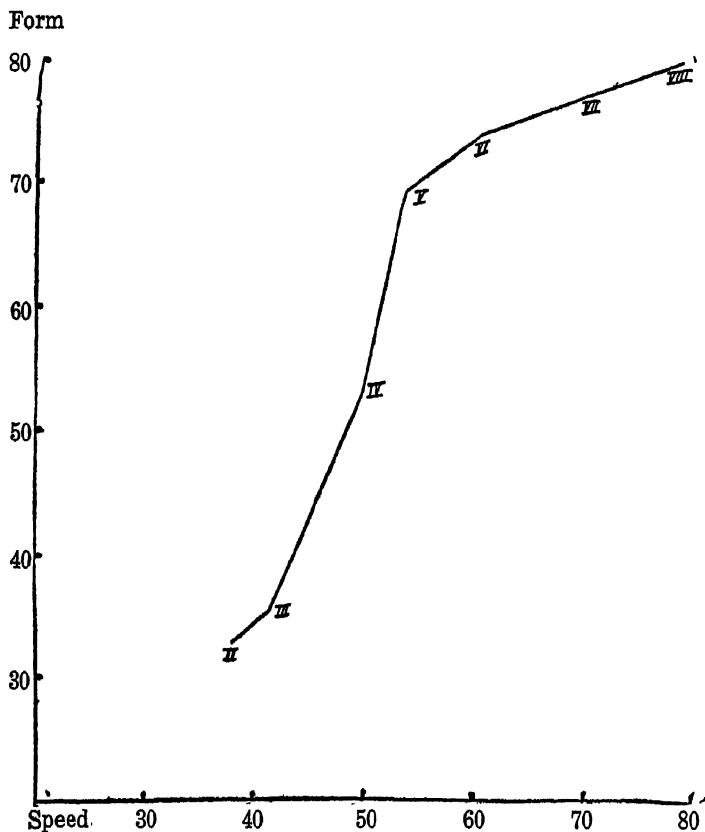


Chart XX. Progress in speed and form in School D shown by the two co-ordinate method.

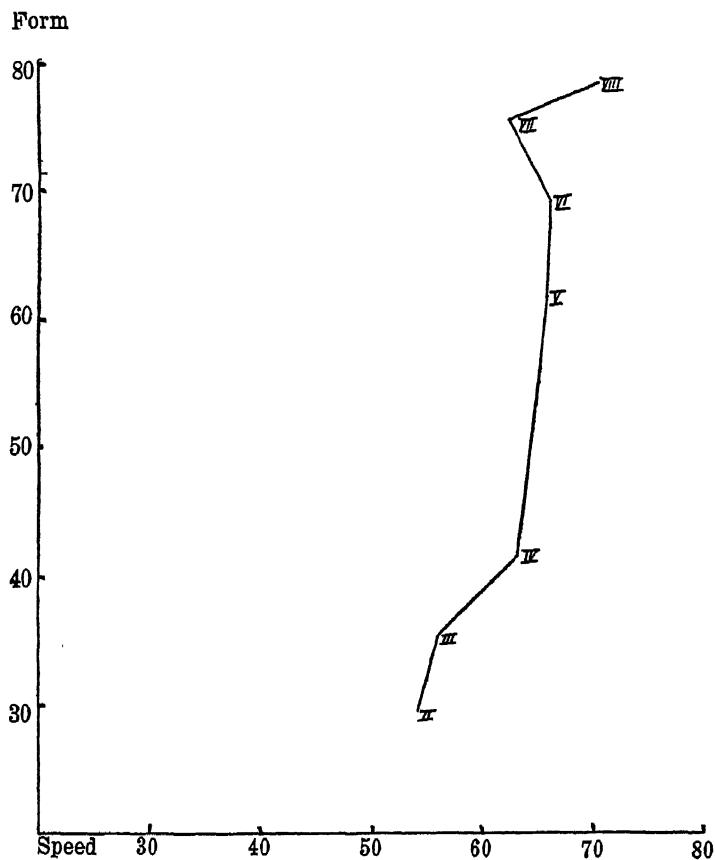


Chart XXI. Progress in speed and form in School P shown by the two co-ordinate method.

Form

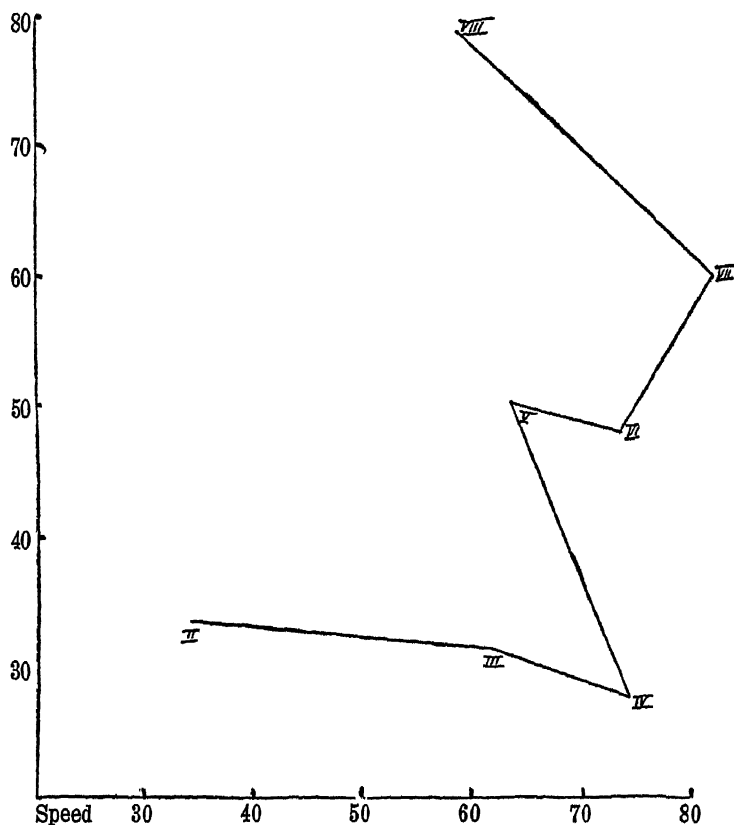


Chart XXII. Progress in speed and form in School D shown by the two co-ordinate method.

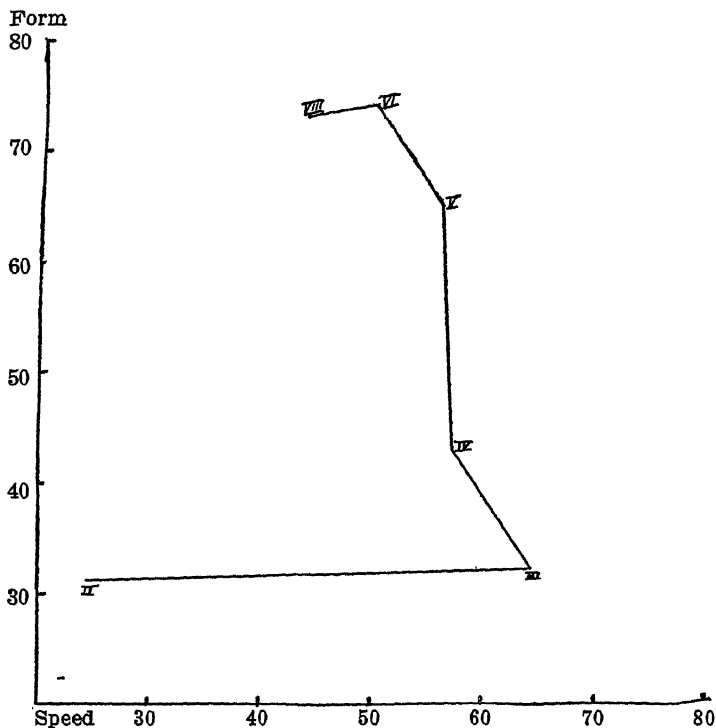


Chart XXIII. Progress in speed and form in School I shown by the two co-ordinate method.

The suggestion which naturally offers itself in explanation of these variations among the different schools is that they are due either to the attitudes of the principals towards the work of the supervisors, or to variations in the work of supervisors themselves. In order to test this explanation a comparison between these factors is set up in Table V. The first part of the table indicates for each school in order whether or not the attitude of the principal towards the work of the supervisors of penmanship is favor-

TABLE V

THE RELATION OF SUPERVISION TO THE SCORES IN THE TEST

School	Attitude of principal toward method in force	Supervisor	Results
A	Favorable	D	Good
B	Passive	E	Fair
C	Passive	C	Fair, poor below Grade VIII
D	Favorable	D	Fair, but erratic
E	Passive	B	Good
F	Antagonistic	A	High, but erratic
G	Antagonistic	C	Poor
H	Favorable	F	Good
I	Favorable	G	Very erratic
J	Favorable	B	Fair
K	Passive	F	Good
L	Favorable	B	Good
M	Favorable	D	Poor
N	Favorable	G	Erratic
O	Antagonistic	G	Good
P	Antagonistic	G	Good
Q	Favorable	F	Good
R	Passive	E	Good
S	Passive	C	Good

Supervisor	School	Result
A	F	High but erratic
B	E	Good
	J	Fair
	L	Good
C	C	Fair, poor below Grade VIII
	G	Poor
	S	Good
D	A	Good
	D	Fair, but erratic
	M	Poor
E	B	Fair
	R	Good
	H	Good
F	K	Good
	Q	Good
	I	Very erratic
G	N	Erratic
	O	Good
	P	Good

Attitude of Principal	Schools	Results
Favorable	A	Good
	D	Fair, erratic
	H	Good
	I	Very erratic
	J	Fair
	L	Good
	M	Poor
	N	Erratic
	Q	Good
Passive	B	Fair
	C	Fair, poor below Grade VIII
	E	Good
	K	Good
	R	Good
Antagonistic	S	Good
	F	High, but erratic
	G	Poor
	O	Good
	P	Good

able, passive, or antagonistic. The next column lists the supervisors by letters, and the third column in a rough way indicates whether the result of the test shows the work of the school good, fair, or poor. In the second part of the table the facts are classified according to supervisors, in order to determine whether some obtained uniformly better work than others. In every case but one, each supervisor has a good, a fair, and a poor school; and since the number of schools is so small, this one exception is not significant. It appears, then, that so far as the results here gathered indicate, the work of the various supervisors is not materially different.

In the third part of the table the facts are classified according to the attitudes of the principals. It appears here also that whether the principal's attitude toward the supervision is favorable, passive, or antagonistic, the results may be good, fair, or poor. This statement may be strengthened by reference again to Charts XII-XIX. The first four of these charts represent schools in which the attitude of the principal is stated to be either passive, or antagonistic,—namely schools F, K, O and P; whereas in the second group of four schools, namely, schools D, H, M and N, the attitude of the principal is entirely favorable. In the first four schools, while the results in some cases are somewhat erratic, they are on the whole good. In the second four they are on the whole not so good as in the first four, being in each case very erratic or below the St. Louis standard.

There may be some of the schools that are here represented in which the penmanship work is injured by the unfavorable attitude of the principal, but, on the other hand, it appears that there are some schools in which the situation is unfavorable from the supervisor's point of view, but in which really good results are obtained. It does not seem to be possible to predict from a knowledge merely of the degree to which the principal supports the work of the

supervisor, whether the results will be good or poor. There are evidently some principals who are able to secure good results even though they pursue a somewhat individualistic course, out of harmony with the general plan. Supervision, then, does not seem to be entirely adequate to produce uniformly good results, and the deviations from successful attainment are not always to be accounted for on the basis of an inadequate execution of the supervisory program.

These facts seem to lead to the conclusion that an additional standard for the measurement of the attainment of the individual school besides the judgment of the assistant supervisors should be set up. This standard should consist of uniform tests of the character of the test which was made in this survey. Such a test will indicate not simply the general rank of the school, but also the nature of the progress from grade to grade, including the relationship between speed and form. Such a test may well be made the basis of determining which schools are doing satisfactory work and which are not. Those in which the work is of high grade may well be left without further detailed supervision, and the supervisory energy may be concentrated upon the schools in which the results are poor. By thus placing a definite standard of attainment before the principals they will be stimulated in increasing numbers to meet the standard, with only occasional outside assistance in meeting particular problems. By this reduction of the teaching activity of the supervisors and the partial substitution of inspectorial tests, the number of supervisors may be gradually reduced.

The method of showing individual differences with reference to the relation between speed and form is shown in Charts XXIV-XXX. In these charts, the average speed in writing of those individuals who receive the various scores in form is shown. Thus in Chart XXIV, representing the second grade, sixty-four children received the score of 20,

and the average speed of their writing was 36; 259 received the score of 30, and the average speed was 45, etc.

It will be of assistance in interpreting the form of distribution represented in these charts to consider the various possibilities. One possibility consists in an antagonism in excellence in form and excellence in speed, so that those that receive high grades in the one characteristic receive low

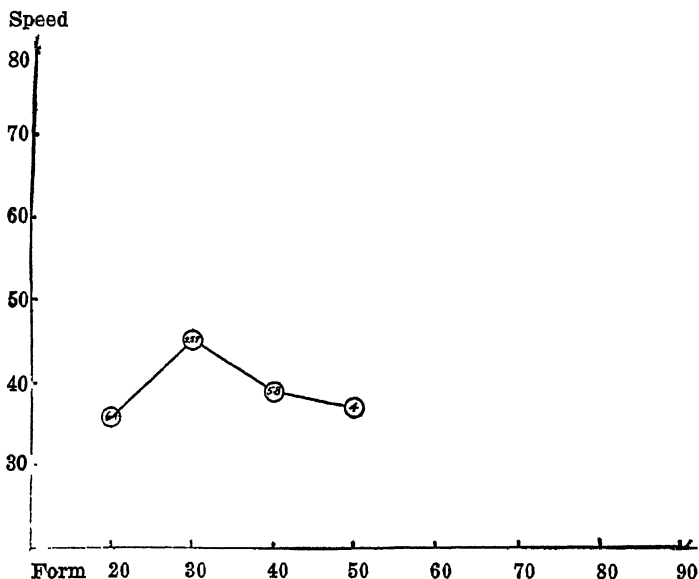


Chart XXIV. Average speed of individuals grouped according to form in Grade II.

grades in the other. This relationship in general was found in the survey of the Cleveland schools as reported by C. H. Judd in *Measuring the Results of the Work of the Public Schools*. On the other hand, it was conceivable that the opposite relationship might exist, namely, that those who show

high excellence in one characteristic show high excellence also in the other; or it might be possible that all the pupils of a grade maintain a uniform standard in either speed or in form and that their variation was entirely in the other characteristic. The first possibility would be represented in general by a line running from the upper left hand to the lower

Speed

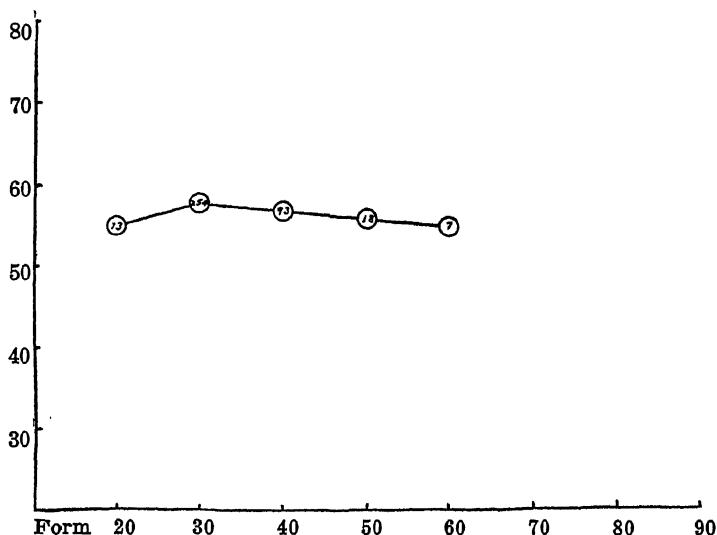


Chart XXV. Average speed of individuals grouped according to form in Grade III.

right hand corner, the second by a line running in general from the lower left hand to the upper right hand corner, and the third and fourth by horizontal and vertical lines respectively. The various grades of St. Louis evidently do not represent any one of these relations exclusively. They may be grouped roughly into three divisions, the second grade occupying one division; the third, fourth, and fifth, the second;

and the sixth, seventh and eighth grade, the third. We may examine these separately.

In the second grade the largest group consists of those pupils who attain a moderate degree of excellence in form, and a relatively high degree of speed. There is in addition to this group a relatively smaller group which has both low

Speed

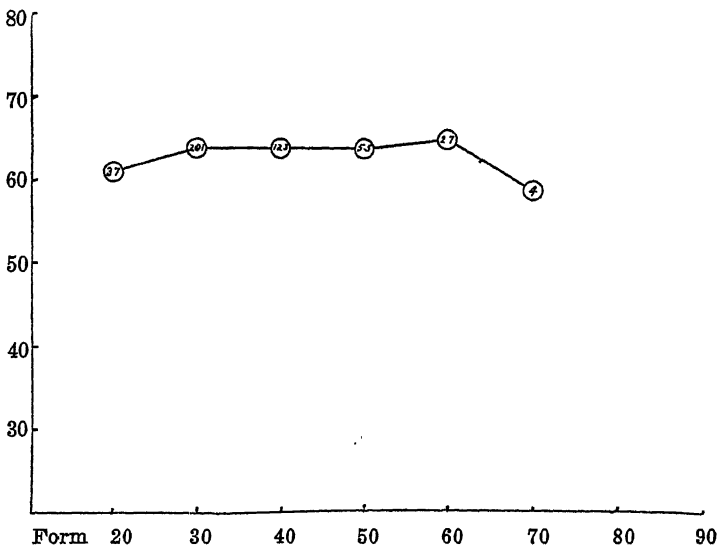


Chart XXVI. Average speed of individuals grouped according to form in Grade IV.

quality in form and low speed, and another group which reaches a somewhat higher standard in form with a lapse in speed. The lowest group apparently represents the naturally poor writers. The next group represents, however, an extreme development in the direction of speed, and the bal-

ance between speed and form might be better maintained in their case by somewhat greater emphasis upon form.

In Grades III-V there is a marked tendency to maintain a uniform standard of speed and allay the variations in the pupils' abilities to be represented solely in differences in form.

In the sixth to the eighth grades, on the other hand, two sets of relationships are represented in each grade. In the

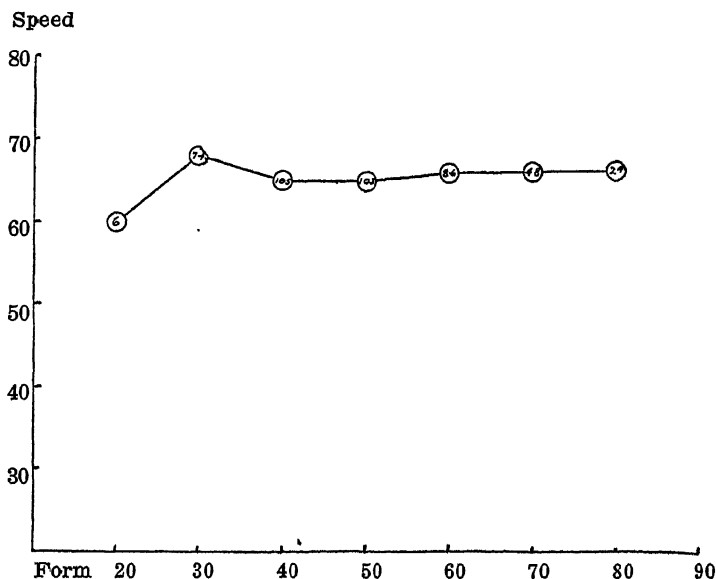


Chart XXVII. Average speed of individuals grouped according to form in Grade V.

medium and poor writers there is the tendency to be grouped in such a way that the better writers are superior to the poorer ones in both speed and form; that is, they represent a radically different type from that represented in Cleveland.

The best writers in each grade, on the other hand, obtain their high degree of excellence at the expense of form, and they write as slowly or more slowly than the poorest writers in each grade.

Here, as in other instances already cited, it may not be possible to indicate with certainty which of the different practices represented is the best. It is worth while to point out,

Speed

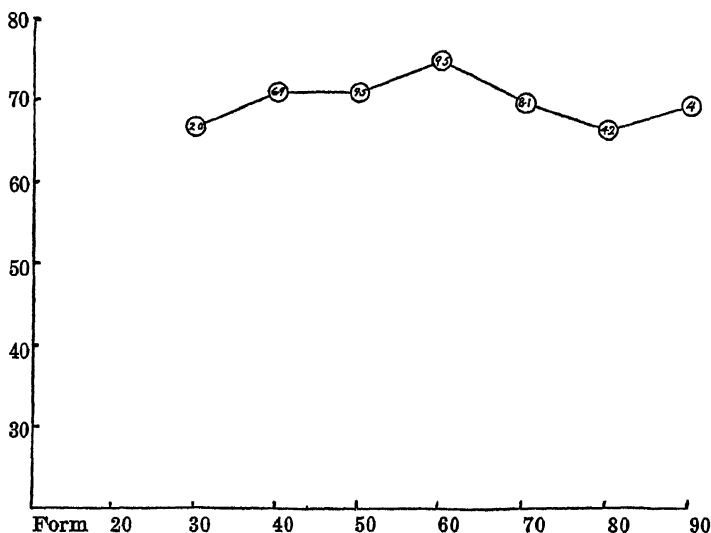


Chart XXVIII. Average speed of individuals grouped according to form in Grade VI.

however, that there is a large diversity in practice, and that we have in such tests as these the instruments for recording what the practice is, and the opportunity to use these instruments in experimentation to determine which practice is the one that produces the most satisfactory results. Since the relationship between speed and form is not one fixed in the

nature of the child, as shown by the diversity in relationship which exists, the most desirable situation would seem to be that in which the various pupils maintain a balance between speed and form, and thus attain the highest rank of which they are capable along a line of balanced progress. Unless

Speed

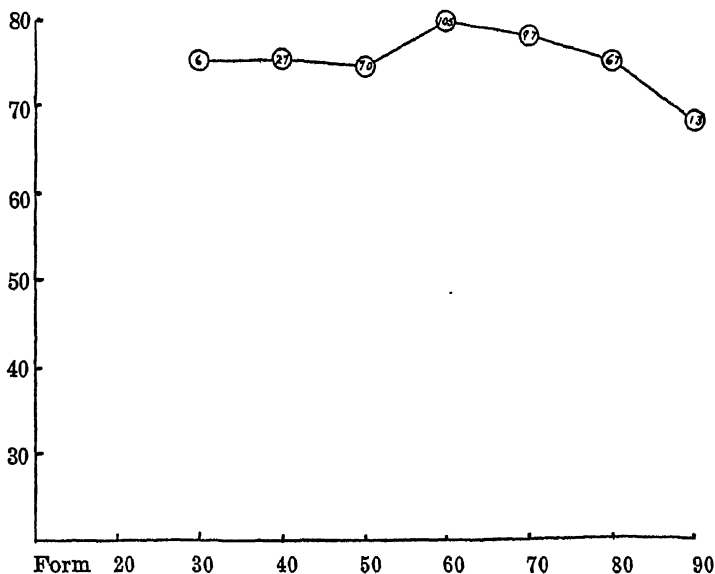


Chart XXIX. Average Speed of individuals grouped according to form in Grade VII.

the contrary can be shown to be the case, it would seem to be better not to specialize to a high degree in either the one or the other of these two characteristics. A considerable degree of specialization appears, however, in the case of a number of the pupils.

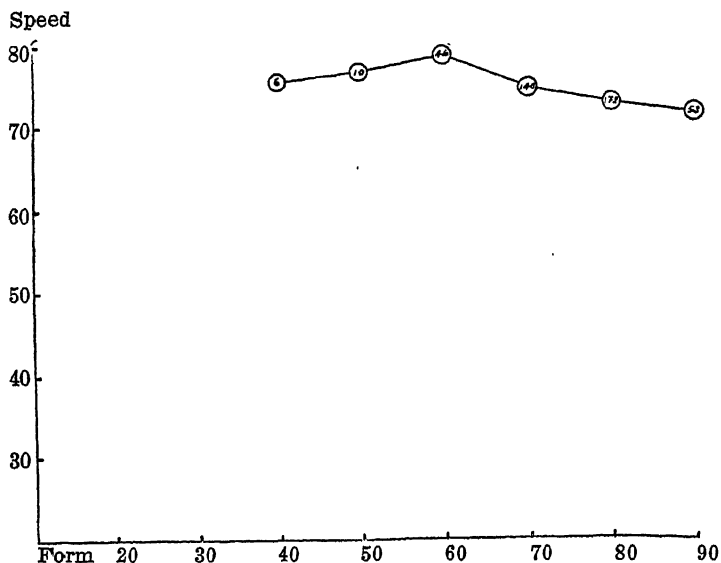


Chart XXX. Average speed of individuals grouped according to form in Grade VIII.

SUMMARY AND CONCLUSIONS

The evidence which was gathered in this survey demonstrates that in general the present system of teaching is effective in producing a relatively high grade of writing. Compared with the general practice, the handwriting of the pupils, with the exception of the lower grades, is well above the average of the other cities which have been examined. Moreover the system is well-established, and the teachers are well trained in its use. Each new teacher receives training in the use of the method under one of the assistant supervisors in the Teachers' Training College. All the teachers in the system ought then to be well qualified and able to teach the system without a great deal of detailed supervision.

The system will not, however, run itself without some supervision; and in fact the survey has shown that there are certain phases of the work which need a type of supervision of a somewhat more minute and exact sort than can be given under the ordinary method of observation. These phases are particularly those which concern variations in results among individual children, grades and schools. The detection and measurement of these variations requires more exact measurement of attainment than is ordinarily employed. The instrument for such measurement in handwriting is at hand in standard tests. The use of such tests to obtain reliable results requires training, but it is possible to train persons who will be competent to do the part of the work which consists in grading papers by a less extensive process than that which is necessary for the preparation of supervising teachers.

The present need for detailed teaching supervision is not the same as it was before the system was established. The time seems to be ripe, therefore, for the experimental introduction in selected schools of the plan of supervision by the principals, supplemented by supervisory tests conducted by the general supervisor. The exemption of individual schools from supervision should be a perfectly objective matter, based on the results of tests. Moreover, tests should be given at regular intervals to insure that the exempted schools maintain the standard, and to serve as a means of assistance to the principal in maintaining a proper balance among the parts of his school. This system would also make it possible to carry on carefully controlled experimental variations in method in different schools.

If the plan here suggested proved successful, it would make possible a gradual reduction in the supervisory force, and the substitution of a printed manual, supplemented, as already said, by the supervision of the principal and supervisory tests. It would not be necessary to make a change suddenly. The plan should be first tried out in a few selected

schools, while in the meantime the machinery for the supervisory tests was being developed. It would probably be necessary permanently to retain one or two assistant supervisors, even if this plan were successful, first, to supervise those schools which were not up to standard; second, to administer and interpret the supervisory tests; and third, to introduce improvements in the method of teaching which should be discovered.

RECOMMENDATIONS

On the basis of the facts which have been presented in this report, and the problems which have been raised by these facts, the following recommendations may be made:

1. That regular tests be instituted as part of the supervisory work of penmanship, both for the purpose of making possible controlled experiments to attack such problems as have been raised in this survey—as, for example, the best type of progress from grade to grade in relationship of speed to form, or the best relationship between speed and form to be maintained among the various individuals of a grade—and for supervision.

2. That these tests be made an integral part of the supervision of the penmanship work in the schools.

3. That when it has been shown by means of standard tests that a school has reached or excelled the average attainment of the system as a whole, detailed supervision be withdrawn from such school, and for a period during which they maintain this level of attainment.

4. As the supervisory work becomes reduced by this process, the staff of assistant supervisors be correspondingly reduced in number. On the other hand the conduct of the tests will cost a moderate amount. One person can conduct tests and work up results for about three schools per week. If the test is given by the principal one person can grade four schools a week.

CHAPTER XV

THE SPECIAL SCHOOLS IN ST. LOUIS

BY WALTER F. DEARBORN

*Summary*¹

Professor Dearborn's report deals with the special schools which have been organized in St. Louis to relieve the regular grades of the care of abnormal children. It is advantageous for both the normal and abnormal children that segregation should be practiced in order that each child may receive the kind of treatment which fits his needs.

It is found that the character of pupils sent to the special schools is very mixed. In some cases children who are backward for disciplinary or other reasons are classed with those that are mentally incompetent. Such a confusion of classes of cases is likely to defeat the end for which the special schools were organized.

It must be recognized, on the other hand, that it is very difficult to select with promptness and precision the cases which should be permanently assigned to the special schools. There is need of examination of the children now in the schools and of the setting up of intermediate provisions, such as ungraded classes where cases can be held for inspection.

It is urgently necessary, furthermore, that methods of securing examinations of doubtful cases be perfected. Some of the principals and teachers of schools must become very much more intelligent and alert in the matter. But the initiative must not be left with the principals and teachers, and in order to meet the present situation it seems desirable that a thorough survey of the system be made by a temporary special group of examiners in order that the school

¹ By Chas. H. Judd.

system may cope at once with this complex problem. It appears from the evidence that probably there are children in the regular grades who should be put into the classes for abnormals. After the selection of such cases has once been made in thoroughgoing fashion, the routine work with special teachers and ungraded classes would make it possible to keep ahead of the problem.

The equipment now provided for the special schools is adequate to meet the demands and to provide for the larger demands of the immediate future which would result from a better segregation of abnormal cases.

The course of instruction for abnormals should emphasize more than at present the non-academic subjects.

The cost of maintaining special schools is relatively high, but the returns for these outlays appear in the comparative low percentage of retarded pupils in the system as a whole.

The report as a whole calls for an enlargement and refinement of the type of work which is at present going on in the system.

RECOMMENDATIONS

1. That the pupils now in the special schools be examined and all those found to be not defective be otherwise provided for.
2. That the initiative in seeking out cases be put for a time into the hands of a special group of examiners.
3. That special training of new teachers and the constant inspection of all the schools by special teachers be provided in somewhat larger degree in order that the schools may keep up with the problem of segregation.
4. That ungraded classes be extended.
5. That the course of instruction in special schools go further than at present in emphasizing non-academic subjects such as gardening, physical training, rug making, knitting, metal work, etc.

THE SPECIAL SCHOOLS IN ST. LOUIS

The following special schools and classes are established as part of the public school system of St. Louis: (1) twelve special schools for individual instruction; (2) a school for the deaf; (3) two open air schools; (4) an industrial school; (5) a boys' truant class and a recently organized class for speech defectives. There is no special school for the blind, provision being made in the Missouri State Institution for the Blind, which is located in St. Louis. The ungraded classes in the regular schools are also discussed in this report in so far as they are connected with the problems of the special schools for individual instruction. The work of the open air schools falls chiefly within the province of the Department of Hygiene and is reported upon in the survey of that department.

THE SPECIAL SCHOOLS FOR INDIVIDUAL INSTRUCTION

For what class of pupils were these schools intended? These schools were, according to the action of the Board of Education of July, 1906, "established for the care of children of defective mentality." The class of children which should be included under this term is discussed with care and insight in the reports of the Superintendent of Schools for this year and the following year. The following citations¹ may be made:—

"The expression 'defective children' does not refer to dull, backward, or slow children who are otherwise normal." "In

¹ Compiled for the writer through the courtesy of Dr. J. E. W. Wallin from the Reports of the Board of Education for 1905-06, pp. 203-16, and 1906-07, pp. 332-341.

some cases a child that is apparently mentally defective is not really so, but suffers from physical ailments." "The term defective applies to that child only who is neglected by nature and is constitutionally incapacitated for the ordinary studies. He may possibly advance a little in intellectual work, but there are narrow limits in the quantity and quality of the school work he is liable to do. He may make a little progress in some of the studies, and yet be incapable of grasping others. Very often the defective child can be taught the elements of reading, but it takes several years before he has mastered the few pages in the primer and even then his reading may be mechanical only, speaking the words without grasping their meaning." "In not a few cases, special training in a small school, by a skilled teacher who has made such work a specialty, may advance the defective child sufficiently to enable him, when he leaves school, to do some useful work in life and to fill some humble economic position." "It is evident that admission to the special schools must be carefully scrutinized and controlled." "The backward or slow child of otherwise normal faculties should not be taken away from the regular school . . . and care must be taken to limit admission to those children who are mentally defective and not merely slow." "No child who can in any way profit sufficiently from instruction in the ordinary schools should be transferred to the special room." "On the other hand, the 'mentally unbalanced', or 'imbecile' or demented children who cannot profit by school instruction at all should not be admitted." They "require the watchful purture of an asylum."

From which it should be clear that in the terminology at present in use these classes were intended for the higher grades of feeble-minded pupils, and not for the merely backward or retarded.

What kind of pupils have been assigned to these classes? It is the opinion of the large majority of the present teachers of these classes, as is shown by a questionnaire directed to

them by the Survey, that other than the higher grades of feeble-minded,—to-wit, the backward, those suffering from physical and special defects, “disciplinary cases”, as well as, in a few cases, low grade imbeciles,—have been in the past assigned to these classes, and that the classes are to varying extents still composed of these different kinds of pupils. In how far may these opinions be substantiated? One way is to ascertain what has become of these pupils after they left school. One of the very commendable features of the work of the teachers of these special schools is that they have been able to maintain relations with the pupils who have left them in years since the schools were established and are acquainted with their careers in a very considerable number of cases.

With a view to making this knowledge available in connection with the present query as to the character of the pupils who have been in the special classes, the teachers were requested to supply the following information:—

1. (a) Names, occupations, and, if known, approximate earnings of all children who have left your school who are known to be self-supporting. Number of cases.
(b) Number who contribute to own support.
2. Number of children who are known not to be self-supporting.
3. Number of doubtful cases.
4. Number about whom nothing is known (as to self-support).

The teachers were particularly asked, in answering under 1 (a), to give the names of those pupils *only* about whom they had reliable and definite information.

The following summary has been made of these reports for the twelve schools:

1. (a) Number of children known to be self-supporting, 192
(b) Number of children known to contribute to support, 167
2. Number of children known not to be self-supporting, 88
3. Number of doubtful cases, 92
4. Number about whom nothing is known (as to self-support), 139

While there is doubtless some danger of mistake as well as of misrepresentation on the part of the pupil as to the exact wages, the accompanying facts furnished by the teachers as to the character of the jobs, the length of time which they have been held, etc., corroborate the statement as to wages to such an extent that they may, in general, be taken as entirely trustworthy.

In a large number of cases teachers report that pupils are known to have held these positions for several years, which is further evidence of stable mentality. Those who are reported by teachers as earning at least five dollars (\$5.00) a week (in the majority of cases no exact statements as to wages are made in the returns), which in view of the average age of the pupils and the fact that the majority have left school within four years may be considered sufficient for self-support, are 71 in number. This leaves out of account most of the girl pupils who are in service as housemaids, as their wages aside from their keep seldom equals this amount.

There are a dozen to fifteen well substantiated cases in which the wages range from nine to fourteen dollars a week. The highest wage given is that of a foreman in iron work, who earns \$28.50 a week. There are as many again who are evidently in independent positions but about whom no definite statement as to income could be made.¹

¹ One such case may be cited of a boy not now at work, who has succeeded in a position which he held for several years and is now studying in a business college. He was in the special school for four years.

The import of these findings is already clear to those familiar with the problems of mental deficiency. No one who can earn a living and support himself without external assistance can be considered feeble-minded. The ability to support oneself is the most commonly accepted criterion of a normal intellect as distinct from feeble-minded. The conclusion is unavoidable that in the past at least a considerable number of those assigned to the special classes were at the most merely backward or somewhat retarded in development. Some were certainly of normal intelligence, including, doubtless, some disciplinary cases.

What sort of children are now in the special classes? In 1914, the Board of Education voted to establish a psycho-educational clinic, and appointed a Director, a part of whose duties concern the proper selection of pupils for these classes. The clinic has now been in operation for two years. All new cases admitted to the special classes have been examined at the clinic, but only a small number of children enrolled before the establishment of the clinic have been examined. Of the present enrollment of approximately 411 children (average daily enrollment 355), 208, according to the reports made by the teachers have been examined. The majority of those not examined are doubtless cases about whose mentality there can be little or no doubt. About some of them there is question, and all should be examined. Of three cases selected by the writer from the special classes for examination at the clinic in connection with the survey of that department, one tested to age, and was considered by the examiner to be of normal intelligence. He was a boy who had been nearly three years in the special school. One of his teachers considered him to be of normal intelligence, and remarked that she "never did understand why he was in the special school." He had been two years in the regular grades, and his school record and present school attainments do not altogether bear out the results of the clinical examination. It was not the intention, however, of the writer

to make this a test case, but in the limited time which it was possible to give to this matter, he formed the opinion that there were a number of cases in regard to whom it might reasonably be questioned as to whether they belonged in the special classes.

That the policy of assigning other than feeble-minded and borderline cases to the special classes is still maintained to some extent may be seen in the report on the diagnoses for the years 1914-15 and 1915-16, of pupils assigned and retained in the special schools. Thirty-eight out of a total of 157 assigned or retained were diagnosed as backward or retarded, in 1914-15, and 17 out of a total of 170, in 1915-16. In addition, in this last year, 4 pupils of normal intelligence, including one disciplinary case and one epileptic, were also assigned to the special classes.

There were reasons, and good ones, for this disposal of these cases, e. g., that in some cases there were no ungraded classes in the vicinity to which the pupils could be sent and that they might do better for a short time at least in the special schools than in the regular; but in view of the misunderstandings which have existed and still exist both on the part of the teachers of the special classes themselves, as well as on the part of the teachers of schools throughout the city as regards the character of pupils who should be sent to the special classes, it is very questionable whether this policy should be continued.

Number of children returned to the regular grades from the special classes. The small number of children who are returned from the special classes to the regular grades would also make the practice of assigning backward pupils to these classes questionable. Some schools in the eight or nine years since they were established have sent back as few as eight to ten pupils. The total number sent back from all the schools since their establishment is, as reported by the teachers, 123.

The average school membership or daily enrollment of the schools for the nine years was 289.

One reason for the small number returned may doubtless be that, particularly in the last few years, the enrollment in these schools has been small for the accommodations provided, and there may have been a more or less natural tendency on this account to keep the pupils on in the schools rather than return them to the grades.

Present methods of selecting children for special classes. The Psycho-Educational Clinic. The work of the Psycho-Educational Clinic has already been referred to above. Its establishment marked a distinct step in advance in the handling of the difficult problem of mental deficiency in the schools, and is evidence of a progressive spirit in the school system. The activities of the Director, in addition to those connected directly with the Clinic and special schools, have included the giving in the Extension division of the Harris Teachers' College lecture courses dealing with the problems of mental deficiency "which have been attended by teachers in special and other types of classes, by probation officers of the Juvenile Court, by officers in the Attendance Department, and by social workers."

Four hundred and thirty "school cases" were examined in 1914-15, and a somewhat larger number in 1915-16 (the exact figures are not available at the time of writing). Thirty-eight of those sent in 1914-15 came from the special school, 20 from the boys' class, and 8 from the Industrial School. Of those examined, about 88% were, in 1914-15, sent by the teachers or principals of the grade schools. That is, the teachers and particularly the principals took the initiative in deciding who needed to be examined at the Clinic. Their judgments as to the number of defective or questionable cases in their respective schools were very varied. One school sent 68 pupils for examination; another equally large school but three blocks away sent but a single pupil.

There were doubtless some differences here in the character of pupils in the two schools, as possibly evidenced by the presence of more ungraded classes in the first school, but scarcely sufficient to account for the large difference in the number sent. Thirty-two elementary schools did not refer any cases at all, and only 18 schools referred five cases or more. Some of these schools have also referred no cases, or but a single case or two on their own initiative, during the last year. It may very possibly be, as one principal of a school of over 1000 pupils in a congested district reported to the writer, that he had no really mentally defective child or at most one defective child in his school, but it is beyond the ordinary limits or probability that he will be equally fortunate for a second year and certainly not a third year in succession.

What percentage of children in the public schools are probably feeble-minded? Investigations have not as yet been extensive enough to make it possible to estimate with any great accuracy the number of children who may reasonably be under suspicion of being feeble-minded. Goddard, as a result of his studies in New York City and elsewhere, believes that the percentage is as high as 2% of the school population. Others have found it not over one-half of one per cent. Mitchell, in the recently published survey of the Cleveland schools, considered that 3% of the children may be considered suspects. This estimate, however, was based on the finding of approximately 2000 children who had been in school three or more years longer than the grades in which they were would indicate,—a not altogether reliable standard. Age-grade statistics of pupils still in the grades who on this basis may be considered seriously retarded are also available in St. Louis as a result of a "Census of Pedagogical Retardation," instituted by the Director of the Psycho-Educational Clinic. But here again age-grade statistics are not very conclusive because of the flexibility in the standards of promotion which have been much in evidence in all our cities as a result of

the publication of the "retardation statistics" of the past decade. It will, however, be sufficient for our present purposes to take the most conservative estimate of even one-half of one per cent, and reckon that in a school of 1000 to 1500 pupils we may certainly expect to find as many as five or more pupils about whose mentality there is reasonable question.

Objection to leaving initiative solely to principals and teachers. In view of the fact that there has, in the past, been a difference as to the character of pupils who should be sent to the special classes, and in view of the fact that the principals and teachers cannot be expected to have had the training which will enable them to sift out the sort of cases who should be sent for examination, some initiative from the side of the Clinic is evidently desirable. This was attempted in part during the last year by requiring from the principals an age-grade census on the basis of which the more seriously retarded were booked for examination. The unsatisfactoriness of this method has already been commented on. Of the 156 children thus listed for examination, 44 were not sent by the principals, for various reasons; they were recent immigrants, or from the country with but little schooling, etc., and 16 left school. Ten failed to appear for examination, and for 19 others the preliminary records which are required have not yet been sent in or the other necessary arrangements have not yet been made. Of the 67 remaining cases which were examined, 43 were sent to the special schools, 22 referred to ungraded classes, 1 to the kindergarten, and 1 to the school for the deaf. The drag net of the age-grade census thus succeeded in getting but a relatively small number of those "stirred up." The phrase is used advisedly. The booking of cases for examinations at the Clinic necessarily causes a good deal of concern to parents as well as to pupils and teachers. It is the belief of the Survey that this could be avoided in many cases by means of a prelimi-

ary examination and sifting of the cases at the school, which could be done without any further formality. The questionable cases may then be referred for further examination by the Department of Hygiene and the Psycho-Educational Clinic. It is recommended that sufficient assistance be given the Director of the Clinic to carry out such work in the schools.

It should, however, be noted at this time as bearing on the possible number of mental defectives still in the grades that of the cases which were finally sent to the Clinic as a result of the age-grade census over half were judged to be feeble-minded or borderline cases and referred to the special classes.

Work of the Psycho-Educational Clinic. The routine followed in the listing and examination of cases at the Psycho-Educational Clinic is as follows: The principal of the school from which the child comes is required to fill out a blank form giving the pedagogical record, the home and environmental conditions, the child's developmental history, and the hereditary factors in so far as they can be obtained. This necessitates a conference with the parents. The child is then referred to the Department of Hygiene for a careful physical examination. It is then customary to notify the parent to take the child to the Clinic. The examination at the Clinic consists of the Binet Simon and supplementary tests, particularly for motor development and certain anthropometric measurements.

The system is excellently worked out and conducted, but it is top-heavy in view of the present conditions in the schools. The number of cases which can be thus carefully examined is necessarily very limited, and, while the results are of value and interest in other connections, such detailed examination is not necessary for the purposes in hand in a very large number of cases referred to the Clinic. This may be seen by noting the character of the cases referred to the Clinic and the disposals made of them. Only a third of the

cases examined in 1914-15 were sent to the special classes; another third were assigned to ungraded classes, which, because of the lack of ungraded classes mean a large number of cases that were simply retained in the classes from which they came;* the remaining third included those excluded from the schools because of low mentality, 9%-10%; 5% were retained in the regular grades, and the rest, for the most part, in the schools or classes from which they came. The corresponding figures for the year 1915-16 are not at hand at the time of writing, but do not differ materially or at least sufficiently to affect the conclusions drawn.

This disposal of cases indicate that there were many cases referred by principals and teachers about whom there could really have been but little doubt, which a preliminary examination at the school could have settled without instituting the somewhat elaborate machinery for the examination at the Clinic. Principals are particularly likely to object (although the fault may be in part theirs) if, after they have interviewed parents and pupil, have asked some intimate question for the filling out of the blanks, have made arrangements for the physical examination, have made appointment for parent and pupil to go to the Clinic, have perhaps suspended the pupil for failure to keep the appointment, as a result of it all the pupil is referred back to the school or even to an ungraded class.

With the increase in the number and better organization of the ungraded classes, many of these cases which are now referred directly to the Clinic will first be tried out in the ungraded class and the problem will be somewhat simplified.

*A careful canvass, instituted by the Director of the Clinic in June, 1916, of the 316 cases which were assigned in the last two years to the ungraded classes, showed that 129 of them had been retained in the regular grades and 132 placed in the ungraded classes. Eighty-eight per cent of the latter were in a single school. The remaining were variously disposed of.

It appears, however, to the Survey, that the initial problem of the correct classification and segregation of the mentally deficient in a city of the size of St. Louis is too large for any one man to meet single-handed. When the situation has once been canvassed, it is a relatively simple problem to keep it in hand. The Survey will, therefore, recommend that a small group of examiners be appointed or trained for the purpose of making this initial canvass of the schools. The connection of the Director of the Clinic with the Harris Teachers' College would make it possible to train a group of teachers for this work. If they were experienced teachers to begin with, this training and the added experience in the mental examining of children would make them particularly well qualified for positions in the ungraded classes, as they are established, and for the special classes, where they could continue to assist in the recognition and proper classification of the mentally deficient pupils.

The mentally deficient children in the regular and ungraded classes. Are there mentally deficient children in the regular and ungraded classes in such numbers as to warrant this departure and outlay? The fact that a large number of schools have reported one, or at most two or three, pupils in the course of several years makes it probable, as pointed out above, that many cases remain unreported. That one-half of the cases secured through the age-grade census of seriously retarded pupils were mental defectives supports this view. A careful study of the number of children who have repeated work would furnish a more satisfactory basis for judging than the age-grade standard alone. Records are available showing the amount of repetition of quarters of work for a given year, but are not accumulative, i. e., there were no reports available for the Survey which showed repetition of work over a period of several years, for any very considerable group of children. Some reports for separate classes furnished the Survey indicated that such a study would be pro-

fitable on a larger scale. The following cases are selected from the regular classes of a single school:—

	Age	Grade	Time in this in other school schools		Total years in school
1	10—9	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
2	13—10	II ⁴	3 $\frac{1}{4}$	..	3 $\frac{1}{4}$
3	10—4	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
4	10—3	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
5	10—3	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
6	11	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
7	11—4	II ⁴	5 $\frac{1}{4}$	..	5 $\frac{1}{4}$
8	10—1	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
9	10	II ⁴	4 $\frac{1}{4}$	..	4 $\frac{1}{4}$
10	13	IV	7	..	7
11	13	IV	7	..	7
12	13	IV ³	2	4	6
13	12—8	IV ³	6	..	6
14	11—11	IV ³	3	3	6
15	12—11	IV ³	7	..	7
16	12	III ⁴	6	..	6
17	11	III ⁴	5 $\frac{1}{2}$	..	5 $\frac{1}{2}$
18	10	III ⁴	4 $\frac{1}{2}$	..	4 $\frac{1}{2}$
19	10—6	III ³	$\frac{1}{4}$	5	5 $\frac{1}{4}$
20	10—6	III ²	4 $\frac{3}{4}$	$\frac{1}{4}$	5
21	11—6	III ³	5 $\frac{1}{4}$	..	5 $\frac{1}{4}$
22	11—9	III ²	4 $\frac{1}{2}$	$\frac{1}{4}$	4 $\frac{3}{4}$

In view of the excellent system of quarter promotions, much smaller amounts of repetition and smaller age-grade differences may be taken as significant than in systems where yearly promotions are made. Children of ten and over who have been in school four years or more and are still in the second grade (compare first nine cases) may certainly be considered suspects in any study of the probable number of mental defectives in the school.

The following cases are taken from the ungraded class in this same school: (1) A girl of 12 from Grade III², who had been 5 $\frac{1}{2}$ years in grades. After 30 weeks of training in ungraded class had advanced two quarters. (2) Boy of 12, from Grade III³, 5 $\frac{3}{4}$ years in school, was not advanced by 10 weeks of training in ungraded class. (3) Boy of 13, from

Grade III³, 5¾ years in school, was not advanced by 10 weeks of ungraded work. The failure to advance under more individual instruction makes these already retarded cases also possible suspects for examination.

Mental defectives at the Industrial School. More conclusive evidence of the presence of seriously defective children in the regular grades may be secured by examining the school histories of children committed to the Industrial School. The following pupils, now in an ungraded class at the Industrial School, are all first commitments who had been for varying lengths of time in the regular school grades. There can be no question about their mentality. They should all have been placed in the special schools.

(1) G. M., boy of 13, now doing 1st grade work. Not capable of doing academic work. In five months learned to spell a few simple words, thus enabling him to write a letter of three or four lines containing such sentences as the following: I have a garden. We play ball. And to correctly address the envelope.

(2) O. L., boy of 14, now doing 2nd grade work. Writing and all hand work done splendidly, but cannot progress in reading spelling and arithmetic. He had been pushed along with his class, which was doing 4th grade work, though he could not recognize such words as *of*, *for*, *which*, *when*, *where*, etc.

(3) F. E., boy of 13, now doing 1st grade work. During five months at Industrial School showed a slight improvement in comprehension, but very little actual progress in academic work. Made marked progress in motor activities.

(4) W. H., boy of 12, now doing 2nd grade work. Had attended school for five years.

(5) J. F., boy of 13, now doing 2nd grade work. Understands with difficulty simple directions which have to be repeated directly to him.

The following cases are from another room. They are all cases "who have attended the regular schools for four years

or more, are far behind grade, but have never attended a special school or have been in an ungraded room." Some of these children come from schools which have sent no, or at most one or two, cases to the Psycho-Educational Clinic for examination. The majority of the cases should have been sent to the special classes. In some instances, at least, this would have undoubtedly rendered their commitment to the Industrial School unnecessary.

(1) J. W., boy of 14. Patrick Henry School, 4 yrs.; Madison School, 1 yr.; Bryan Hill School, 6 mos.; Industrial School, 1½ yrs.; III Gr., III Qr.

(2) F. G., boy of 15. Penrose School, 6 mos.; Divoll School, 1 yr., 3 mos.; Clinton School, 1 yr.; Pope School, 1½ yrs.; Peabody School, 1½ yrs.; Crow School, 1 yr.; Industrial School, 1 yr.; III Gr., III Qr.

(3) F. S., boy of 15, Pestalozzi School, 4 yrs.; Madison School, 5 yrs.; III Gr., I Qr.

(4) J. M., boy of 13. John Marshall School, 2 yrs.; Cote Brillante School, 2 yrs.; Penrose School, 1½ yrs.; Industrial School, 6 mos.; II Gr.

(5) E. M., boy of 11. St. Vincent School, 3 yrs.; Pestalozzi School, 1 yr., 4 mos.; Industrial School, 3 mos. Barely able to do II Gr.

(6) S. B., boy of 15. Attended school 3 yrs. in New Orleans; Jackson School, 2 yrs.; Industrial School, 10 mos. Barely able to do II Gr., IV Qr. work.

The teacher of another ungraded room who has had six years' experience as a special class teacher submits the names of five pupils now in her class who have been for varying lengths of time in the regular grades and who are in her estimation "fit subjects for special schools or ungraded classes." It is her experience as a teacher in the Industrial School, that some of the worst cases of mental defect come from the regular grades rather than from the special classes. It is also the experience of this teacher, as well as of the teacher of the

special class at the Industrial School, that defective children who come from the special schools give evidence of much better training than those of equal defect who come from the regular schools; and they are often graded higher. These observations may also be taken as evidence, if any were needed, that the special class instruction is better suited to these pupils than that of the regular grades.

Finally, a teacher of a third ungraded class has submitted a list of pupils varying in age "from nine to fifteen years, inclusive, many of whom have attended four or five schools, and some few as many as eight schools." In some instances their stay in the schools has been so short that it cannot be expected of the school authorities that they have formed in the time any accurate judgment of the abilities in the various school subjects; others have spent years in the regular grades. Three in the list, of ages 9, 10 and 11, respectively, are now doing first grade work in the ungraded class, one of twelve years of age is doing second grade work, four of eleven or twelve years of age are doing third grade work. The school records alone indicate that several others are undoubtedly mentally defective. Their accomplishments are not better, in some instances, than pupils in the same class who have come to the Industrial School via the special schools.

School Tests and Mental Deficients. As a further source of evidence in regard to the probable number of mentally deficient children in the regular classes, some of the poorest records made in the tests of reading and arithmetic given in the schools in connection with the survey have been examined and tabulated.

In the reading tests, it may, in general, be noted that of over 700 second grade pupils tested, 22 per cent are one year behind grade in age, 5 per cent are two years behind grade, 1.3 per cent, three years behind grade, and .3 per cent tested four years behind grade. In the fourth grade, 27 per cent of the pupils are one year retarded by age; 13 per cent are

two years retarded; 4.4 per cent are three years retarded; 1.4 per cent are four years retarded; .3 per cent are five years retarded; .1 per cent are six years retarded. These percentages are also based upon a total of more than 700 pupils tested. Judging from these tests in reading, there are at least five to six per cent, or from 70 to 80 of the pupils tested in these two grades alone who are so seriously retarded as to come into question as regards their mentality.

The results of a canvas of the poorer records in arithmetic are shown in the following table. Out of 209 records examined there were 190 who were from three to ten years retarded. The grade medians for this comparison were those found in the Cleveland survey; the grade medians in St. Louis not being available at the time of writing. They are somewhat higher than those of Cleveland making the retardation of the above cases proportionately greater.

The school tests were given in but three of thirty or more ungraded classes. Some of these rooms are in the nature of coaching classes to which pupils are sent for varying periods with the hope of restoring them to grade. Others are intended for pupils so seriously retarded that they cannot profit by the regular grade instruction. There is presumably a larger proportion of mentally defective cases in these rooms than in the regular grades. In order to come to some conclusion on this point the tests were tried in the three ungraded rooms. Out of 63 pupils tested in arithmetic there were 45, or 71 per cent who were doing work from three to seven years behind the grade they should be doing, judging from their ages.

It is fair to conclude from the above results that there are at least from two to three hundred pupils in the regular grades and ungraded rooms who are doing school work so far behind the grade of work they should be doing judging from their ages that there may be reasonable doubt as regards their being possessed of normal mentality. Many of these cases will, on further inquiry, prove to be foreign born

children or children who have recently come from country schools with little or no schooling, or other similar reasons will be found to account for their retardation, but a certain proportion of them—possibly a third, judging from experience elsewhere, will be found to be feeble-minded.

TABLE OF TOTAL RETARDATIONS (IN ARITHMETIC)

Years behind	2	3	4	5	6	7	8	9	10	Totals
Number of pupils in										
Grade IV	10	15	15	1	3	0	1	1	0	46
Grade V	3	23	25	11	10	3	2	0	0	77
Grade VI	3	7	9	6	2	2	0	1	1	31
Grade VII ...	3	5	3	8	6	3	1	0	0	29
Grade VIII ..	0	1	6	7	8	3	1	0	0	26
Totals	19	51	58	33	29	11	5	2	1	209

NOTE: A pupil's Total Retardation is found by adding the number of years he is behind his grade according to his age and the number of years he is behind the median of his grade in arithmetic. These results were obtained by finding the Total Retardation of each individual, and distributing as above.

Conclusions in regard to mental defectives in the regular classes. The various lines of evidence discussed above, namely, estimates of the probable number of defectives on the basis of the experience in other cities, the age-grade and grade retardation studies of those who repeat work, the school records of mental defectives from the regular grades at the Industrial School, and the results of the tests given in the school subjects, are sufficient to indicate that there are still many feeble-minded children in the regular grades. Some principals and teachers, in the experience of the Survey, seemed to take it as a criticism of the efficiency of their work and of their schools and classes to suggest that there might be feeble-minded children under their charge. This attitude of mind must be changed. These children, as shown for one thing by the comparative study possible in the Industrial School, are better off in the special classes and are better trained

there. A better understanding on the part of principals and teachers of the problems of mental deficiency is needed. A canvass of the schools by properly trained examiners, as indicated above, would seem to the Survey the most effective way of meeting the present situation, and would, if properly carried out, do much to promote a better understanding of the problems involved on the part of those in charge of the regular schools.

The enrollment of the special classes. The consideration of the present enrollment of the special classes has been left until after the discussion of the last section, as the conclusions there made are of interest in this connection.

The average daily enrollment of the special classes, which includes all those enrolled who have not withdrawn, no matter how long absent, was for this year (1915-16) 355. The average daily attendance was 320. The total enrollment at the end of the quarter, June, 1916, was 377. There are, on the present basis of assigning 15 pupils per teacher, "teacher accommodations" for 420 pupils, and classroom accommodations for 510 pupils. One school, No. 10, was closed in 1914, and pupils distributed to other schools. The suggestion which has been made of further consolidation should certainly not be seriously considered until the question of the number of defective pupils still in the regular grades has been more thoroughly canvassed.

One fact of special interest in regard to the enrollment is that for many years there have been at least twice as many boys as girls enrolled. At the end of June, 1916, there were 71% of boys and 29% of girls. The fact has been variously explained. It means, for one thing, that the mentally defective girls, being more docile, and possibly in some cases gifted with better memories, are kept along in the regular grades, and are not referred to the special schools, as they should be.

The length of time of the enrollment of pupils has been calculated by returns furnished the Survey by the teachers

and supervisor of the special classes, and may be summarized as follows:

90	pupils less than one year
83	" one year
91	" two years
58	" three years
38	" four years
19	" five years
11	" six years
3	" seven years
3	" eight years

Buildings, equipment, teaching staff of special schools. The Survey was early impressed with the excellent provisions which have been made for the training of the mentally deficient pupils in St. Louis, and the efficiency of the teaching staff in the special schools. This impression formed in the first round of visits was in every case substantiated by the further study of these schools.

The special schools are all housed in separate buildings, one of which was specially constructed, one of which, a fine private residence with ample grounds, is owned by the Board; the remaining buildings are roomy private residences, well suited for the purpose, which have been leased by the Board. One of the buildings was poorly lighted and artificial light was needed in certain other rooms on dark days, but the accommodations in other rooms of these buildings were sufficient to make this a matter of no particular concern. The roominess of the buildings will make possible, with but little change, the accommodation of new lines of work, such as, for example, cooking, in case such additions to the curriculum seem desirable in the future. The grounds about most of the buildings are sufficient for both gardens and playground.

There are now twelve separate schools, one having been discontinued in 1914. There were, in June, 1916, a total of 30 classes and 28 teachers.

The schools are well equipped, and there was no lack of the usual materials. New work and innovations requiring new materials are introduced as rapidly as is usually possible in any large system.

Curriculum of special schools. The work in the three R's and other academic subjects have been in recent years reduced, and may probably be well reduced somewhat further. In its place the curriculum has been enriched by the many activities which are recognized as best suited for the work of the special schools, such as manual training, gardening, physical training, games, folk dancing, singing, excursions to parks and country, and the work in basketry and rug making, knitting, darning, and mending, clay modeling, and some metal work. A list of articles exhibited in June, 1916, supplied through the courtesy of the Supervisor of the Special Classes, will indicate the range of work.

Looms—large and small, with mats woven of yarn and cotton rovings, warp, cord, etc.

Baskets—reed, flat and round—Raffia, a few willow (not satisfactory for use in special schools).

Scarfs, caps, and neckties, wash rags, made on looms (round and square)—constructed by children.

Wearing apparel, underwear, waists, shirts, etc.

Crochet—diversified—samples of crochet work—from simple chain stitch to filet crocheted lace.

Towels—hemmed and embroidered.

Samples of darning, mending, etc.

Clay modeling—animals, birds, Mother Goose Jingles, stories.

A little copper—hinges, corners for boxes.

Wood—benches, stools, flower stands, book racks, trays, etc.

Cut-outs in bass wood—animals, and toys, bird houses.

Games—checker board, ring toss, tit-tat-toe, kites.

A little scheme through pieces of dwelling and small houses to teach local geography.

From one Special School—houses made to show the development of the home from the simplest dug-out to modern bungalow.

Concrete stand, flower box and pot.

Cooked rice, potatoes, spaghetti, toasted bread, etc.

Sand—a fort, manned and equipped.

Many of the articles exhibited must be criticized on the basis of the elaborateness of design and the finished technique and workmanship which they show. They are in no real sense the product of the children of the special schools. They represent and give play to the constructive abilities of the teachers concerned and only in a small degree to that of the pupils. Cruder work that really represented such creative ideas and gave play to such initiative of the pupils as actually exists, little as it is in most cases, would be infinitely better as a means of education.

There is at present but little—practically speaking, no—domestic science in the schools. Judging from the replies of the teachers in regard to desirable additions to the curriculum they are distinctly in favor of adding the teaching of plain cooking and household work. One reason against this addition is the small number of girls in the school and the failure to suggest comparable work for the boys, although housework, care of lawns, and extra work in gardening, etc., might easily be substituted. Some simple vocational work might also profitably be introduced for the boys. The special difficulties of introducing such work are that the positions which these boys will fill, if they really fill any, are of the most menial sort, for which no special preparation is possible. The general work of the school is the best vocational work for the most of these pupils.

The work of the Supervisor of the Special Classes. The general duties of the Supervisor include, in addition to the supervision of instruction, the ordering of supplies and equipment, the inspection of buildings, and securing location of new buildings as leases expire, and the recommending of

teachers as vacancies arise. The following excerpt may be made from the statement submitted by the Supervisor at the request of the Survey.

"In May, teachers are requested to submit to Supervisor list and estimate of supplies and materials to be used for the ensuing year. These are purchased by the Supply Department and distributed at the beginning of the term. As need occurs for other supplies not requisitioned at the beginning of the term, request is made on Form H (blank enclosed) for approval of Supervisor and Superintendent, and then cared for by Supply Department.

"Requests for repairs to buildings are first approved by Supervisor of Special Schools and sent through Superintendent to Building Department.

"Supervisor of Special Schools is asked to report to Superintendent and Secretary and Treasurer, the condition of buildings at end of term, repairs needed, and approve or disapprove of renewal of leases of buildings for Special Schools. When building is unsatisfactory at end of leasing period, the Supervisor takes initiative in finding more desirable property.

"*Teachers.* When a vacancy occurs in the Special Schools or new classes are organized, all Assistant Superintendents are asked for names of successful teachers with desirable qualifications for Special Class work. The Supervisor is expected to visit the classrooms of teachers so recommended (usually from 8 to 12 classrooms). Recommendation is finally made to the Superintendent of two or possibly three candidates; from these the teacher is selected."

Recommendations of the teachers of the special classes. Some recommendations in regard to the schools were made by the teachers at the request of the Survey. They concerned, first, means of improving the attitude of the community towards the schools and of removing the present stigma at-

tached to them. Visits of parents, school exhibits, concerts and performances, also visits from teachers of the regular schools, naming the schools instead of numbering them, were among the suggestions made. Other recommendations were: a shorter school day, a single session or the shortening of the noon hour, and the furnishing to teachers by the Board of Education of small sums for the purchase of new and incidental materials which they may wish to try out in their classes and which are now very commonly bought privately, and the providing of funds for excursions and outings.

The expense of the special schools. The cost per pupil for all the special schools for the year 1914-15 was \$174.70, on the basis of the average per pupil per hour of attendance \$.1664. This high cost of instruction will be reduced somewhat as the defective children in the regular grades are referred in larger numbers to the schools, and the provisions for teachers and accommodations accord with the attendance. Whatever the cost of instruction may need to be, the proper care and training of these children is, as is well recognized by the school authorities of St. Louis, a problem which cannot be weighed in dollars and cents.

CLASSES FOR SPEECH DEFECTIVES

Two small classes—in the nature of experimental classes—for speech defectives have been established at the school for the deaf. The reason for this location is that the teachers of the deaf have in their regular work given particular attention to training in enunciation, etc., and are better equipped to take up the problem of speech defects. The returns from a questionnaire sent out by the Psycho-Educational Clinic to the principals of schools indicate clearly the need of an increase in the number of these classes, and the taking up of this general problem in a more thoroughgoing fashion.

BOYS' TRUANT CLASS

This class was established in 1912, and is intended for truant and incorrigible boys from the regular grades. It includes boys who have been released from the Juvenile Court or are on probation to the court. The enrollment for the year was 28. Four, as a result of examination by the Psycho-Educational Clinic, were referred to the special schools. Such a class as this saves a great deal of friction in the regular grades. Its equipment should be enlarged to provide a greater variety of non-academic work. The introduction of vocational training would seem to be particularly desirable in the case of this class.

THE INDUSTRIAL SCHOOL

The industrial school is housed in part in the city proper, and in part in a new location at Bellefontaine Farms. The removal of the school to the country and the adoption of a cottage system is a great step in advance in the handling of the problem of delinquent children. Three cottages have been opened with about twenty-six children in each, divided for school purposes into two groups of thirteen. This arrangement will give less opportunity for graded school work, but this objection is counterbalanced by the many advantages from an institutional standpoint.

It has been shown in the report on the special classes for mentally defective children, of which there are two at this institution, that there are many mental defectives in the industrial school. In order that they may be recognized on entrance and assigned to proper classes, it is desirable that all questionable cases be given a mental examination. This should preferably be done at the court before commitment.

The work of the school is handicapped by the system of indefinite commitments under which the majority of the pupils are committed; some pupils stay but for a few weeks, and the length of time they are to stay is not known by the

principal or superintendent. In view of the short periods for which the pupils remain in the school, and of the additional fact that most are seriously retarded and a considerable number are mentally defective, the survey concurs in the recommendation of the principal that the classes remain small, as in the special schools for mentally defectives, in order that there may be opportunity for individual instruction.

The school work in manual training and domestic science should be increased, there being at present only about two and one-half hours a week given to these subjects. On the whole, less time should be given to the "academic" subjects, for much the same reasons as are presented in the discussion of the curriculum of special schools for mentally deficient pupils.

One other aspect of the work of these classes which is worthy of comment, and one which has been made possible by the removal of the school to the country, is the correlation of the school work with the activities of the children in the work of the cottages and on the farm. A list of problems in arithmetic which were being used in one of the classes is appended as an example of what may be done in this respect.

LIST OF PROBLEMS

1. If the 26 boys in the Lewis Cottage consume 11 pans of bread, each pan containing 2 loaves, each day, how many ounces of bread are eaten by each boy in a meal? What is the cost of the bread for a day, one month (30 days), one year (365 days) at \$0.031½ per loaf?

2. If 26 boys require 15 pounds of potatoes for a meal, how long will a bushel of potatoes last? How long will a sack last?

3. If each boy receives a glass of milk twice a day, what part of a quart does he receive? What does a quart of milk weigh? A gallon?

4. Our mules measure 16 hands, how many feet high are they? From what point is the mule measured? How many pounds does our new team of mules weigh?

5. What is the perimeter of the chicken house that you have just finished building? How many board feet did it require? What is the cost of the lumber at \$25.00 per 1,000 board feet? What did it cost to put tar paper on the roof at \$.75 per roll of 10 yards.

6. If our 75 chickens are fed one gallon of feed for breakfast and the same for supper, how long will a bushel of chicken feed last?

7. How many gallons of milk does our best cow give per day? How many pounds does she give?

8. How many cubic feet of cinders will be required to make a walk 100 ft. long, 5 ft. wide, 1 ft. deep? Each load measures 10 ft. x $4\frac{1}{2}$ ft. x 3 ft. What will be the cost at \$.05 per load?

9. How many bushels of clover seed and how many of timothy are used with our oats to sow 36 acres, if 8 pounds of clover seed and 11 pounds of timothy seed are used for one acre?

THE SCHOOL FOR DEAF CHILDREN

The following statement in regard to the school for the deaf is made by the superintendent of schools in a circular of information.

"The Gallaudet School is a public school maintained by the Board of Education exclusively for the education of children who are totally or partially deaf. Experience has shown that such children cannot be taught successfully in classes with children who are able to hear, as they require special methods of instruction. Moreover, children who cannot hear not only learn more, but are much happier in schools where everything is arranged to meet their needs, and where they are taught by teachers who are specially prepared for the work to be done.

"The classes of the Gallaudet School are small, numbering only eight or ten pupils, so that each pupil can be given such individual attention as is needed. Speech, lip reading, and the sign manual are taught. The course of study consists of the Grammar School and the High School branches, including Manual Training and Domestic Science."

The time available for the examination of the school was very limited. The officer of the survey was, however, satisfied that the high grade of instruction which he had observed in the regular schools and in other special schools was also maintained in this school. The instruction is based on the so-called combined system, in which both the manual alphabet, or sign language, and oral methods are employed. There has been local criticism of the school on the grounds that a purely oral method of instruction should replace the present methods. This is a time-worn topic of discussion to which the teachers of the deaf have given sufficient attention. The survey unreservedly supports the practice of this school. There is no more reason why a natural use of signs on the part of the deaf should be repressed than that one should forget his native tongue in order to learn a foreign language. On the other hand, as in the case of learning a foreign language, it may be desirable that the use of signs be for varying periods of time held in abeyance until the new means of expression is well established. As it is, it is estimated by those well informed that under the combined system considerably over half of the pupils are taught exclusively or chiefly by means of the oral method. There are, however, many pupils who do not profit by this form of instruction, and who would lose much in the way of general education were instruction limited to this method.

CHAPTER XVI

HIGH SCHOOLS

By A. B. MEREDITH

*Summary*¹

This chapter deals with the high schools. The high schools of St. Louis organized on the cosmopolitan plan represent a large investment in the opportunities of higher education. The cosmopolitan school is the most democratic form of high school organization.

The strict adherence to a curriculum which is elected by each student makes it difficult for the students to get the full benefit of the cosmopolitan opportunities, but results in a well ordered systematic arrangement of individual programs.

The high schools of the city are well organized and are all closely supervised from the central office. There is a high degree of uniformity in the courses and in the methods of work. Mr. Meredith suggests that it would be advantageous for the system to give the individual teachers more incentives to try experiments. He also recommends the organization of departments within the schools as a substitute for the present form of faculty organization under which the principal is the head of all departments.

Mr. Meredith finds the equipment in the high school capable of advantageous readjustment and he finds that it is unnecessarily large. The simpler equipment which he suggests seems to him better suited to educational ends.

The last half of this section of the report is devoted to detailed discussion of instruction in various departments. In general Mr. Meredith found the teachers well qualified for their work and instruction of a high order. He regards some of the curricula as too heavy.

The chapter closes with an elaborate series of recommendations.

¹ By Chas. H. Judd.

HIGH SCHOOLS

The secondary or high school department of the St. Louis Public Schools consists of the units indicated in the following table:

Name	Date of Opening	Teachers	Enrollment Term Ending Jan. 31, 1916
Central	1853-1854	79	1585
McKinley	1903-1904	63	1452
Yeatman	1904-1905	64	1381
Soldan	1908-1909	88	2089
Cleveland	1915-1916	51	1217
Sumner (colored)	1875-1876	35	796
		<hr/> 380	<hr/> 8520

The ratio of high school enrollment to the total day school enrollment during the 15 years has increased since 1900-1901 from 2.96 per cent to 9.68 per cent. At the present time each school enrolls more pupils than the buildings originally were planned to accommodate and additional facilities will soon be necessary. The percentage of increase in high school enrollment over each preceding year for the past ten years has been as follows:

School Year	% of Increase	School Year	% of Increase
1905-1906	2.1%	1911-1912 . . . . .	.4%
1906-1907	7.8%	1912-1913	5.5%
1907-1908	2.9%	1913-1914	6.0%
1908-1909	13.0%	1914-1915	11.7%
1909-1910	10.5%	1915-1916	12.7%
1910-1911	8.8%		

TABLE I.—ENROLLMENT BY COURSES AND SCHOOLS

Courses	Preceding Half Years	Central	Cleveland	McKin- ley	Soldan	Yeatman	HIGH SCHOOLS	
							Sumner	
Art	Sept., 1914 ...	84	..	84	109	57	9	
	Jan., 1915	91	..	92	85	70	7	
	Sept., 1915 ...	75	38	62	98	36	10	
	Jan., 1916	60	42	55	84	40	8	
Classical .	Sept., 1914 ...	26	..	22	20	11	0	
	Jan., 1915	30	..	24	20	8	0	
	Sept., 1915 ...	27	16	14	26	10	0	
	Jan., 1916	23	19	12	26	7	0	
Commercial .	Sept., 1914 ...	238	..	214	173	214	42	
	Jan., 1915	361	..	263	212	271	54	
	Sept., 1915 ...	275	200	170	209	222	63	
	Jan., 1916	308	254	216	226	250	62	
Domestic Science	Sept., 1914 ...	182	...	267	294	189	148	
	Jan., 1915	192	...	291	327	180	184	
	Sept., 1915 ...	162	168	202	286	168	234	
	Jan., 1916	148	200	236	293	188	245	
Manual Training	Sept., 1914 ...	235	...	287	264	176	145	
	Jan., 1915	223	...	359	289	190	166	
	Sept., 1915 ...	181	191	242	269	171	179	
	Jan., 1916	169	211	276	267	197	185	

TABLE I—Continued.—ENROLLMENT BY COURSES AND SCHOOLS.

Courses	Preceding Half Years	Central	Cleveland	McKin- ley	Soldan	Yeatman	Sumner
General	Sept., 1914 . . .	319	...	246	674	267	224
	Jan., 1915 . . .	443	...	253	721	348	216
	Sept., 1915 . . .	333	162	333	781	317	254
	Jan., 1916 . . .	382	190	342	813	396	241
Scientific	Sept., 1914 . . .	209	...	113	179	76	0
	Jan., 1915 . . .	246	...	138	198	76	0
	Sept., 1915 . . .	214	72	112	204	59	0
	Jan., 1916 . . .	219	94	116	242	60	0
College-Classical	Sept., 1914 . . .	0	0	0	9	0	0
	Jan., 1915 . . .	...	...	...	6	...	...
	Sept., 1915 . . .	...	...	...	2	...	...
	Jan., 1916 . . .	...	...	...	4	...	...
College Scientific	Sept., 1914 . . .	0	0	0	37	0	38
	Jan., 1915 . . .	0	...	...	25	...	40
	Sept., 1915 . . .	0	...	...	14	...	40
	Jan., 1916 . . .	0	...	...	12	...	50
Teachers Preparatory ..	Sept., 1914 . . .	18	0	0	16	5	0
	Jan., 1915 . . .	14	0	0	16	0	0
	Sept., 1915 . . .	0	0	0	12	0	0
	Jan., 1916 . . .	0	0	0	4	0	0

TABLE I—Continued.—ENROLLMENT BY COURSES AND SCHOOLS.

Courses	Preceding Half Years	Central	Cleveland	McKin- ley	Soldan	Yeatman	Sumner	HIGH SCHOOLS	
2-year Commercial	Sept., 1914 ...	148	...	147	73	153	7		
	Jan., 1915	186	...	190	73	192	4		
	Sept., 1915	229	127	122	86	140	5		
	Jan., 1916	236	169	159	104	164	5		
2-year Manual Training .	Sept., 1914 ...	...	...	23	9	39	0		
	Jan., 1915 ....	...	...	19	7	47	0		
	Sept., 1915 ....	...	29	18	5	30	0		
	Jan., 1916 ....	...	19	20	13	38	0		
2-year Domestic Science	Sept., 1914 ...	...	...	10	3	0	1		
	Jan., 1915 ....	...	...	8	3	...	...
	Sept., 1915 ....	...	...	3	2	...	...
	Jan., 1916 ....	...	...	5	1	...	...
1-year Commercial	Sept., 1914 ...	59	...	40	0	40	0		
	Jan., 1915	54	...	47	0	48	0		
	Sept., 1915	55	23	26	0	39	0		
	Jan., 1916	40	19	15	0	41	0		
Total for all Courses ...	Sept., 1914 ...	1568	...	1453	1860	1227	614		
	Jan., 1915	1840	...	1684	1982	1430	671		
	Sept., 1916 ...	1551	1035	1304	1994	1192	785		
	Jan., 1916	1585	1217	1452	2089	1381	796		

A. Organization—Administration and Supervision

The cosmopolitan type of high school, as distinguished from the specialized high school, such as the manual training, commercial and technical schools found in some cities, is a characteristic feature of the St. Louis system. Each school follows identical curricula and in all essentials the equipment of every school is of the same general character. In the more recently constructed buildings, and especially in the Cleveland School, added experience in furnishing school rooms has effected some variation in particular pieces of apparatus, in the details of laboratory arrangement and in providing more complete opportunities for physical training. The Sumner High School, for colored youth, has in addition to the courses offered in other schools, a normal training course of two years, and a vocational automobile course of one-half year. Further, the six high schools are organized and administered in essentially the same manner; the textbooks are the same, and any given subject of instruction is taught from essentially the same point of view in all schools. Hence, a careful study of any one school will give all the necessary data for an understanding of the entire secondary system of the city.

This uniformity in the general plan of administration and in many details of classroom practice, as well as the common viewpoint, is due to several factors, the chief of which is undoubtedly to be found in the historical development of the high school system.

In 1853 the Central High School was opened, and during the succeeding years up to 1878, there were associated with it five branch high schools. From 1879 to 1882 two other branch schools were established which were later discontinued, and in 1892-93 the Central High School and the branch high schools were consolidated.

In 1904 the McKinley and Yeatman schools were opened in different parts of the city. In 1908-09 the Soldan school was occupied, and in 1915 the Cleveland school received its first classes.

It is but natural, therefore, although the newer schools added industrial arts to the program of studies, that the influence of the ideals, the curricula and the practices of the original high school would continue to be strongly felt in the newly established schools. On the other hand, the newer schools reacted upon the Central school by broadening its program of studies, but the total result of the interaction of one school upon the other has been to place a strong emphasis upon uniformity.

Another element tending in the same direction is the close relation that all the schools bear to the central office through the supervisor of secondary education, one of the Assistant Superintendents, who was formerly principal of the Central High School. For this able official there is throughout the entire high school system the most complete loyalty and respect. The stamp of his strong and vigorous personality is therefore in evidence in all the schools, and a feeling exists on the part of principals and teachers alike that conformity to established practices and to the official viewpoint should be the rule. The result is that without specific direction to the contrary no attempt is made to vary the curricula or the content of any given subject of instruction in the several schools. Whereas with high schools serving different constituencies and with pupils pursuing the same subjects with a variety of ends in view, a greater degree of variation would under the conditions bring each school nearer to its special problems and would doubtless make it much more effective. These problems would be apparent in part from a study of the distribution of pupils among the different courses in the various schools. And again, there is always the problem of meeting the needs of individuals by making up pro-

grams with special emphasis upon some one or two fields of knowledge or skill.

The spirit of uniformity is further promoted by frequent and regular meetings of the high school principals at which questions of internal administration are discussed and a general policy determined upon regarding the administration of the uniform curricula found in all schools. Although these meetings are not a part of the official administrative plan, and each principal is therefore free, subject to the central office, to administer his school in his own way, as a social whole, nevertheless, such frequent meetings as are held,—while admirable in developing a spirit of solidarity within the system, and while they account, in some measure, for the general high level in the quality of the instruction throughout the city,—tend to preserve a likeness in the several schools, especially in the absence of a positive supervisory policy to the contrary.

As a fourth and underlying element, from numerous individual conferences, there appeared to be a feeling that the general policy of the high school system was determined by a philosophy of education and of educational values which placed a premium upon a particular order of topics and of studies, and again upon a definite balance of studies within a curriculum, and finally by a notion often freely admitted, that in the last analysis education is largely a matter of mental discipline rather than a question of the adjustment of a pupil to his material, social and spiritual environment.

Many teachers seemed to be impressed with the idea that when a subject of study or an order of topics had been determined upon through a consideration of its relation to a system of thought, there was an inherent finality in the arrangement which prevented experimentation and question, and hence uniformity was expected. In but very few instances, and these were isolated, was it found that teachers or principals were at work experimenting with a new

order of topics within a given subject, or a different point of view regarding the same subject. Upon inquiry I learned that little encouragement was offered for such a procedure—uniformity must, therefore, result.

An instance of this general attitude is found in the fundamental idea back of every curriculum, that a study of some foreign language is a necessary part of a complete high school education, hence, at least two years of some foreign language is required of every pupil, irrespective of any possible use he may make of his knowledge. If a foreign language is studied at all, two years is an excellent curriculum, but why any foreign language for all pupils? The result is many small classes and many failures, with consequent high per capita cost and no practical gain, to many pupils.

Another example of the absence of adaptation to individual needs and a reflection of the prevailing viewpoint is seen in the case of physics. This subject is treated in the same manner for all pupils, boys and girls alike, and with no regard to the particular curriculum followed, and moreover, is required of all pupils. In 1909 a list of laboratory experiments which forms the core of the physics course was prepared by a committee of physics teachers representing each high school, and subsequently copyrighted by the Board of Education. Each experiment is outlined in detail and while some choice is given as to just what experiments may be taken in any given term, in each high school, nevertheless, the experiment chosen is to be done in the same manner. A high value is apparently placed upon the development of skill in laboratory manipulation and in the mathematical aspects of the subject, and relatively little attention is paid to the applications of the principles taught to the problems of everyday life. Physics is apparently thought of solely as a body of organized knowledge to be taught for its own sake. A number of teachers stated that they would welcome differentiated courses in this

subject, and even its omission by some pupils, but felt of course that conformity to the ideal for the city was expected of them. The subject and its particular development have apparently chief consideration and not what the subject plus the teacher may do for the boy or girl who is being trained to understand the material world in which he is placed.

All parts of the city, then, are served by the same type of school, with the result that wide opportunities are open to many because of the extensive program of studies offered in each school, while at the same time, because of the small number of pupils enrolled in many of the classes of the last two years, the per capita cost of instruction is relatively high. For example, in the Central High School in January, 1916, there were but two pupils enrolled in the eighth term of Spanish and five in the seventh term class. At the same time the seventh and eighth term classes in this subject at the Soldan High School enrolled three and four pupils respectively. In Greek at the Central School in the fifth term class there were two pupils and in the sixth term class at the McKinley School but one pupil. In Latin the condition was not much different, for at the McKinley School in the seventh and eighth term classes there were respectively five and eight pupils. To offset this condition a larger number of such classes may be assigned to a teacher (six instead of five), but even this plan means that the teacher taking an extra small class is not free to be assigned a larger one. If two small classes are assigned to one teacher in the same period, as is sometimes done, the financial situation is altered a little, but in the direction of economy.

The situation with respect to the languages in a single school, the Cleveland, is shown in the following table:

Terms	Latin	German	French	Spanish
5-8	16.1%	10.9%	7.8%	8%
1-4	83.9%	89.9%	92.2%	92%

The facts are as of June 1, 1916, and the figures are percentages of the total number of pupils pursuing each subject. One remedy for the situation would be to concentrate the instruction in certain languages as Greek and Spanish in one or two schools, but this plan would be a departure from the purely cosmopolitan type of school to which the city is committed. Another remedy would be to curtail the range of subjects any school may offer, since there are limits to the ability of the city to offer different subjects or four years of any one subject. Classes so small as some of those in Greek, for example, where 12 out of the 17 classes in the city have each 5 pupils or less and the remaining 5 classes have each 10 pupils or less, could be allowed to disappear in favor of more urgently needed classes.

The difference in the figures for the first four terms and the last four would not be as great if at least two years of some one language were not required of all pupils. In general such a situation as is shown above is inevitable under present conditions, and the facts are cited that the situation may be understood.

Mention has already been made of the uniform curricula in the different schools. That each school requires the same arrangement of subjects in what are called courses, and the fact that within these courses the options are few, chiefly in the choice of a language and in the third year between more science or more mathematics, tends to defeat the very purpose of the cosmopolitan type of secondary school. Pupils are required to choose definite courses, and having chosen a course it is difficult to change without loss through having to make up certain work omitted, so that the result is virtually the same as if the pupils were in attendance upon specialized schools, except that, of course, pupils do not have to travel from one part of the city to another.

There is another type of cosmopolitan school in which there is open to each pupil on a much freer elective basis the whole program of studies, including those generally termed aca-

demic, as well as the various forms of practical arts, both for boys and for girls, and also the commercial arts. Flexible curricula or courses are outlined in general terms, and according to principles which will insure a natural sequence of subjects, and secure the results from intensity of effort in a few carefully selected fields, with less emphasis upon others. Each pupil is studied and guided in a selection of a curriculum best suited to his individual needs, and the subjects taught are organized so as to contribute specifically to the ends sought by any well defined group of pupils. This plan of administration is, we believe, broader and more advantageous. The cosmopolitan idea is indeed present in the St. Louis schools and is most heartily to be endorsed. It is prominent in the social contact pupils have within the same school, and in the fact that each school offers the same program of studies that all offer.

General Supervision. The general supervision of the six high schools with a total of 394 teachers, as has been stated above, devolves upon one of the assistant superintendents. This official also supervises 15 elementary schools, a manual training and domestic science center and a special school, which together have 266 teachers. The number of schools and the variety constitute a task in supervision in which immediate personal influence in affecting the quality of classroom instruction is too limited because of other duties. In the elementary schools, with a curriculum uniform for all pupils the task is not so complex as that of the high school with its variety of subjects and activities, even though the program of studies in each high school is the same. Such personal knowledge of actual classroom work in the high schools as the superintendent may have can come from but occasional visits and much reliance must be placed upon reports of principals, and upon such results as appear in statistical tables.

These reports, which deal with facts of enrollment, failures, and grades given to various groups of pupils, are made half

yearly with other less extensive reports which are collected quarterly. All the reports are carefully prepared and contain valuable information. They could be made of greater value if time were available for their full interpretation and if the results of such studies were promptly referred to the schools for conference and application.

Attention should be called in this connection to two very important and extensive studies which have been recently made by the assistant superintendent with the help of principals and teachers. One investigation dealt with the use of time by high school pupils and was published in the annual report of the Board of Education for 1914. An effort was made to ascertain how high school pupils used their time during the several days of the week. The statistics were taken to cover twenty-five inquiries of a general nature with regard to the time spent regularly or systematically, and special inquiries with reference to the time devoted to the preparation of the various subjects offered in the respective half years of each course. The results of the special study are being used by those in charge of the revision of the course of study, and many suggestions are given regarding the evenness or inequalities in the distribution of the various phases of the subjects through the successive half years in which they are studied. Some hints also are given concerning the relative difficulty of the subjects studied through the time required for their preparation.

One conclusion from the special study confirms general observation. A comparison of the average time spent by boys and by girls in the study of the various subjects shows that the girls spend on an average eight minutes more a day on each subject with a range of 1 to 35 minutes. The average time spent on a single subject by girls is 44 minutes, by boys 36 minutes, by both 40 minutes. This corresponds very closely to the estimated time used in school administration, viz., 43 minutes of preparation for 43 minutes of recitation. Another study is one dealing with the number of failures in

each subject in all the high schools, together with the distribution of grades in each subject, grouped by schools, by teachers and by terms for the school year ending June 30, 1915. The results have not been returned to the teachers, but when they are, much interesting material concerning the efficiency of instruction and the standards of teachers' marking will be at hand. Much self-examination should follow, and modifications made in practice, through a standardization of the marking system.

The secondary schools are a specialized department of the public school system with problems radically different from those of the elementary schools and the number of schools and of teachers is sufficient to warrant the assistant superintendent devoting his entire time to their general supervision. Opportunity would thus be afforded to guide developments in varying the content in the subjects of different curricula and in directing the attention of teachers very definitely to the question of method, a phase of school work generally neglected among high school teachers. This requires personal touch with conditions and also requires time.

It should be said, to avoid misunderstanding, that the general quality of instruction in the different classrooms is remarkably high. Teachers have been chosen with care and they are students of the subjects taught. At the same time they expressed themselves as desiring more personal contact with the superintendent in the discussion of their particular work, both in its relation to the immediate problem of the classroom and to the general policy of the city.

Administration. The executive head of each school is the principal who does no teaching, and who in most instances, has come up through the system and therefore is thoroughly conversant with its traditions and policies. The principal in each school is a broadminded, well trained and sympathetic administrator with a masterful comprehension of his particular problem. Each school has also an assistant principal who likewise does no teaching, but in general, attends to the

administrative detail of the school. Cases of discipline are referred by teachers to the assistant principal who also follows up and interviews all pupils who are backward in their work and who may have been referred to him by the pupil advisers. Usually when pupils have failed in two subjects as shown by the semi-quarterly reports, they come automatically to the attention of the assistant principal. Another duty of the assistant is to interview parents who come to inquire regarding pupil's work, or who may be sent for to assist in adjusting some difficulty of discipline or some delinquency. From the decision of the assistant principals appeals may be made to the principal, but such appeals are infrequent. In each school the assistant principal is a very efficient officer, and showed a complete grasp of the situation. In every case the principal spoke very enthusiastically of his assistant's work.

Pupil Advisers. The plan of pupil advisers is to be found in all high schools upon essentially the same basis. To each adviser from 20 to 30 pupils are assigned for educational guidance and help. The pupils' report cards, which are sent home twice each quarter, are distributed through the advisers who thus have an opportunity to keep in touch with each pupil under his charge and give any admonitions or commendations the conditions may warrant. Many of the advisers keep personal but unofficial records regarding pupils under their charge and frequently act as vocational counselors. Frequent conferences with the principal and assistant principal and a series of circulars of information keep the advisers in touch with the general administration of the school, in all its details this system is to be highly commended.

If the advisers could be assigned to pupils of the entering class earlier so that assistance could be given in the selection of the work to be taken, it is likely that fewer false choices would be made and the number of failures in first year work reduced. To these advisers then could well come some qualitative estimate from the elementary school of an entering pupil's

ability and of his special strength and weakness. To assign advisers after a pupil has been in school nearly a month is late to avoid beginning difficulties. Some such form as the following may prove helpful:

PUPILS' RECORD CARD

Name of pupil	Age
Name of teacher	
School	

Note.—The teacher will express her judgment of the pupil regarding each of the following points, using the letter A. to indicate “conspicuously excellent;” B, “successful but not conspicuously;” C, “weak;” D, “conspicuously weak.”

1. Reliability.
2. Industry.
3. Accuracy.
4. Ambition.
5. Special aptitudes (name them).
6. Manners.
7. Health.
8. Grasp of school work (*i. e.*, maturity and power of thought).
9. Any worth while thing done in or out of school without the compulsion of an older person, *i. e.*, ability to find something to do and ability to do it—intellectual, mechanical, commercial.
10. Regularity of school attendance.
11. Number of years spent in elementary school.
12. What the pupil proposes to do.

Ratings in examinations.

Arith.	Pen.	Spelling	U. S. Hist.	Geog.	Eng.
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To the Teacher: Cross out the following statements that do not apply:

This pupil is prepared for high school work.

This pupil should be allowed to try high school work.

This pupil is not recommended for high school work.

Special Assignments. The school day in general, consists of seven forty-five minute periods, although actually in some schools nine periods constitute the daily schedule. Each teacher, however, is in school but seven periods. The normal work of each teacher is 5 recitations daily with an extra period assignment which may be to the library or to a study room, except where some other duty is specified. The seventh period is for the preparation or correction of work. Among the special assignments which are practically the same in all schools and which require work either in school hours or after dismissal are the following:

A teacher in charge of the distribution of books to each class. A complete and accurate record and inventory is kept of all texts.

A teacher in charge of the distribution of supplies, who also has an accurate statement at all times of the supply situation.

A teacher who is responsible for the care of the library, spending at least one period a day there, and being assisted during the other periods by assigned teachers. Much time must necessarily be spent outside of school in this work.

To another teacher is given the preparation of the programs for auditorium exercises, which in all but the Yeatman School are occasional. This school holds daily exercises.

Other assignments are to the charge of athletic interests including their financial management, to the school paper and to the school annual, to pupils' organizations and to the social life of the school.

No extra compensation is granted for this work which the principals say is willingly done. From conversations with those teachers having special assignments an excellent spirit of co-operation and loyalty to the school and to the system was manifested.

Since recommendations for advancement in salary grade are dependent upon the recommendation of the principal, the assignment to particular tasks gives teachers a chance to dis-

play qualities of leadership and executive skill which may lead to larger salaries and to positions of greater responsibility.

Assignment of Classes. A new school term begins in September and February, respectively, and hence twice a year the daily time table of recitations for each school is completely rearranged. New classes, approximately 70 per cent of those completing the elementary school course, enter the various high schools, and must be assigned to recitation sections. Those pupils who have failed are required to repeat, the next half year, the subject in which they have failed, if they expect to be graduated, and provision must be made for them, so that even at the best the making of a workable schedule of classes is a complex and difficult undertaking. Other elements entering into the problem are the fact that teachers do not as a rule teach more than five periods a day, and the further fact that in all subjects the recitation sections are not to exceed 30 pupils, although they might well be larger in such subjects as penmanship, typewriting and bookkeeping. This increase would reduce the per capita cost in these subjects. The classes are larger in music and physical training.

The actual situation regarding the size of recitation sections may be seen from the accompanying table.

High School	Number of Students in Each Section											Total
	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	50+	
CENTRAL												
Recitation	26	62	211	277	415	719	94	19	5	9	33	1,870
Study	0	11	20	22	22	67	22	12	13	21	35	245
CLEVELAND												
Recitation	9	21	53	102	208	261	42	11	17	8	32	764
Study	52	41	32	20	20	13	14	7	1	1	0	201
Combination	2	26	63	67	96	170	246	43	7	7	0	727
McKINLEY												
Recitation	15	40	102	116	227	187	167	24	15	0	29	922
Study	0	8	1	2	3	15	2	2	3	7	37	80
Combination	0	2	7	9	82	106	254	151	34	25	30	700
SOLDAN												
Recitation	15	16	125	160	272	517	94	27	32	14	6	1,278
Study	11	15	0	4	13	12	54	42	30	22	29	232
Combination	5	5	5	15	45	158	279	256	166	33	7	974
STUMPER												
Recitation	5	30	60	55	85	120	50	10	10	10	10	445
Study	0	10	10	5	10	0	0	0	0	0	5	40
Combination	0	0	30	30	55	125	125	95	5	10	..	475
YEATMAN												
Recitation	40	91	116	228	194	215	39	15	14	8	29	989
Study	0	0	0	0	1	0	2	2	0	0	0	5
Combination	0	0	7	20	50	192	192	117	47	43	27	695
ALL HIGH SCHOOLS												
Recitation	110	260	667	938	1401	2019	486	106	93	49	139	6,268
Study	63	85	63	53	69	107	94	65	47	51	106	803
Combination	7	33	112	141	328	751	1096	662	259	118	64	3,571
ALL HIGH SCHOOLS												
All divisions	180	378	842	1132	1798	2877	1676	833	399	218	309	10,642

The 26 in the upper left-hand column means that there are 26 classes or sections or class periods in the 7 different courses with 5 or less pupils in the Central High School.

THE FOREGOING TABLE REDUCED TO PERCENTAGES

High School	Percentage of Students in Each Section										
	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	50+
CENTRAL											
Recitation	1	3	11	15	22	38	5	1	0.3	0.5	2
Study	0	4	8	9	9	27	9	5	5	9	14
CLEVELAND											
Recitation	1	3	7	13	27	34	5	1	2	1	4
Study	26	20	16	10	10	6	7	3	0.5	0.5	0
Combination	0.3	4	9	9	13	23	34	6	1	1	0
McKINLEY											
Recitation	2	4	11	13	25	20	18	3	2	0	3
Study	0	10	1	3	4	19	3	3	4	9	46
Combination	0	0.3	1	1	12	15	36	22	5	4	4
SOLDAN											
Recitation	1	1	10	13	21	40	7	2	3	1	1
Study	5	6	0	2	6	5	23	18	13	9	13
Combination	1	1	1	2	5	16	29	26	17	3	1
STUMMER											
Recitation	1	7	15	12	19	27	11	2	2	2	2
Study	0	25	25	13	25	0	0	0	0	0	13
Combination	0	0	6	6	12	26	26	20	1	2	0
YEATMAN											
Recitation	4	9	12	23	20	22	4	2	1	1	3
Study	0	0	0	0	20	0	40	40	0	0	0
Combination	0	0	1	3	7	28	28	17	7	6	4
ALL HIGH SCHOOLS											
Recitation	2	4	11	15	22	32	8	2	1	1	2
Study	8	11	8	7	9	13	12	8	6	6	13
Combination	0.2	1	3	4	9	20	31	19	7	3	2
ALL HIGH SCHOOLS											
All divisions	2	4	8	11	17	27	16	8	4	2	3

In the construction of the daily schedule of classes it does not appear that any successful effort has been made to have a class in any year subject such as English, algebra, plane geometry, etc., assigned to the same teacher for the entire year, or for two successive terms. A conscious exception to this condition exists more often during the last school year, or the seventh and eighth school terms, than in any other part of the high school course. It would be better, if pupils are to meet new teachers twice a year, that they do this during the latter part of the course rather than during the earlier terms. A prominent cause for so many pupils dropping out of school during the first year is their failure to become adjusted to the new order of administration, one feature of which is meeting several teachers daily instead of one. To change teachers in the middle of the year and thus create the possibility of meeting eight teachers in two terms, forces upon both pupil and teacher an undesirable situation. Many teachers regretted a condition which added to their difficulties in getting a close and intimate knowledge of their pupils and seemed to feel that whatever program making difficulties were in the way could be removed. Pupils of the senior year are better able to adjust themselves to new teachers and should not be given an advantage, over those who are less likely to remain in school.

On the other hand, evidences were found where the work assigned to teachers differed from term to term so that pupils did not always have a teacher in the subject he was best prepared to teach. The absence of a system of certification for particular subjects makes this condition legally possible. This changing of a teacher's work was especially marked in the commercial department where the large majority of the teachers are college graduates, who have added to their general academic preparation a technical knowledge of business subjects and skill in such commercial arts as typewriting, stenography, bookkeeping and penmanship. In those subjects especially which require a large degree of motor activity,

such as typewriting and penmanship, and in a subject like stenography, to be thoroughly effective, a teacher must be in constant practice. In saying this it is not asserted that high speed is the essential quality in the successful teaching of the commercial arts, but accuracy is important and this can come through constant practice. Moreover, in order that a teacher of business subjects may make his instruction vital, he must be in continued and active touch with business conditions for which his classes are making preparation. Not many teachers can keep this intimate touch and teach a commercial class for half a year and then the next half year be prepared to teach with equal effectiveness economics and civics, or psychology and ethics, or some other wholly unrelated academic subjects.

Commercial subjects are essentially vocational in their purpose and should be taught with this aim in mind and the results measured by the standards of actual business use. What the public demands in these subjects the school should furnish; hence, the teachers of these commercial arts must be specialists.

The penmanship at the Central High School is taught by such a specialist and the work is especially commendable. At the Yeatman High School the penmanship is taught by no less than ten teachers in seventeen classes. At the Soldan High School there are seven commercial teachers and, as is assumed in the other schools, each teacher in the commercial department is presumably prepared to teach any commercial subject that may be assigned to him. In theory the assignments are divided into three groups: bookkeeping and commercial arithmetic; stenography and typewriting; commercial law, commercial geography and commercial correspondence, and a teacher's work limited to some one of these fields. There are, however, sufficient instances of overlapping and of frequent change to call attention to the desirability in practice of a more specific assignment within a narrower field. A number of those teaching stenography are conscious of being able to do better work in teaching typewriting, and some of those teaching type-

writing would undoubtedly do better work if they were teaching bookkeeping. It is recognized that it is not always possible to make all assignments in accordance with the theory of specialization but it does seem as though the idea of developing specialists in at least those commercial subjects which especially emphasize motor skill should have closer attention in schedule making. A system of departmental heads with some administrative authority would aid in bettering this condition.

Another instance of division of interests in subjects vocational in character was found in the Cleveland High School, in connection with the home arts department. Two teachers, each qualified to teach sewing and cooking, were each assigned classes in both of these subjects, instead of having one teacher teach all the cooking and the other teach all the sewing. For the cooking classes the allowance was 6.25 cents per pupil per lesson and to be spent by each teacher. Had one teacher all the cooking the total allowance for the year could be more economically spent than it could be spent when each teacher spent her allowance independently. In the administration of the kitchen there was of necessity a divided responsibility which did not make for business efficiency. It is likely that this division was for the purpose of testing out each teacher to determine ultimate assignment.

Another problem in schedule making arises from the fact that there are four-year and two-year commercial courses, domestic art and science courses and manual training courses. This means that some recitations in subjects such as commercial law, which is a third year subject in the four year course, and a second year subject in the two-year course, contain pupils from both groups who differ in maturity. In the two-year manual training course, civics may come in either the first year or in the second year, while in the four-year course this subject comes only in the first half of the fourth year. The same condition is found with regard to this subject in the two-year domestic art and science course. Again,

in each of these courses history may be taken during the first year while in the four-year course the first work in history comes in the first half of the third year or in the fifth term. A similar situation arises in another department, that of foreign languages, because of the requirement of at least two years of a foreign language in each course for graduation. Pupils of the fifth and sixth terms of the third year are found in the recitation classes with pupils of the first and second terms, and but two months removed from the elementary school. Added to this condition is the fact that in some instances the advanced pupils have already had two years of foreign language study. The result of such a combination of pupils in a recitation group is to keep the level of instruction either up to that of the ability of the more mature pupils, in which case the probabilities of failure are multiplied for the younger group, or to keep the instruction at the level of the earlier pupils and not provide a sufficient task for the older pupils. Every effort should be exerted in roster making to bring together homogeneous groups of pupils, on the basis of degree of advancement, and according to the particular curriculum followed, assuming of course differentiated curricula. It is apparent that with the courses as now arranged that a separate class for the four-year pupils and the pupils of the shorter courses which include the same subjects would add expense, so that by the combination there is a financial economy.

No evidence was apparent that any effort had been made to classify for recitation purposes entering pupils on the basis of their previous attainments in mathematics or English. Pupils should have sent with them from the elementary school as has already been suggested some qualitative statement regarding their strengths or weaknesses in the various fields of school instruction. Many cities use a cumulative record card for each pupil. With such a statement principals and advisers could place in recitation groups in English or in Mathematics pupils of similar ability. While the task of making

a time schedule of classes would be increased because of this differentiation of classes, according to ability and curriculum, the results obtained would more than justify the added study. The school exists to meet the needs of pupils as they come to the school and this means flexibility and differentiation in the administrative machinery. The entering pupils are in special need of study and oversight so that the school mortality may be appreciably reduced.

It is not assumed that any of the matters discussed have not been in the minds of the principals and roster makers, but actual difficulties pointed out by teachers make it desirable to give the topic of assignment of classes some emphasis, and to urge a readjustment at least in one school with a view to adoption by all.

BUSINESS AND SOCIAL ADMINISTRATION

In all, 17 days were spent in the six high schools observing the character of the administration and noting the quality of instruction in chance, but typical recitations, covering the entire program of studies.

The reception accorded by principals and teachers alike was most cordial, and exemplified the spirit of each school as a social whole. Questions were frankly and willingly answered and valuable information regarding the organization and administration of the schools was volunteered. Some of the most helpful means of gaining a knowledge of the purposes of the school and of the ideals of the teachers came through informal conferences in corridors and in classrooms, after the schools were dismissed.

The order in all schools was excellent. There was a noticeable absence of repression and no teacher monitors were in evidence. Pupils passed quietly and naturally to and from recitations, the gymnasium and the lunch rooms. During the luncheon recess, on their respective floors, pupils moved about in quiet groups and engaged in orderly conversation. The

machinery of government was inconspicuous, and an admirable morale was observed in all schools. Each principal conducts his own school according to his own methods and ideals. At the Yeatman School the upper class pupils are quasi-officially charged with the general decorum of the school and with the setting of its standards of conduct. They assume this responsibility with pride and with effectiveness.

In the Yeatman School only, is a daily assembly held in the school auditorium. In the other schools the classes come together about once a week or once in ten days. The mere fact of an entire school meeting as a whole once a day does much to create a spirit of solidarity. The daily assembly emphasizes the fact that a school is not a mere collection of classroom units but that it has a social unity. Furthermore, the assembly affords an unparalleled opportunity for the principal to impress his personality upon the entire life of the institution. With the splendid auditorium possessed by each school this opportunity of the principal should not be lost. It was learned that the commendable practice was followed of inviting in successful men in different walks of life to address the pupils. Much may be done through this channel in the field of vocational guidance.

Each high school has the usual social or extra-scholastic activities, participation in which is considered a privilege which may be taken away by the principal for good cause. Among the organizations are the following, not all, however, being found in any one school: boys and girls' athletic associations, band, botany, camera, French, scientific, chess, classical, cycle, engineering, German, mandolin clubs, boys literary and debating society, school orchestra, college club and a dramatic club. Each school prepares a school annual, and at the McKinley School a paper is printed by the pupils. At the McKinley School the auditorium is too small to accommodate all the pupils at one time so that on alternate weeks the pupils of different sections of the entering class meet as literary clubs, during the weekly auditorium period. The unique feature of

these junior clubs is that each is composed of the pupils from some one of the contributing elementary schools, and during the first year of the high school course these pupils see each other in groups such as those to which they have been accustomed in the elementary schools. The effect, so the principal states, has been to assist entering pupils in getting adjusted to the high school easily and quickly. They soon begin to feel at home. By the end of the year the entering pupils are thoroughly amalgamated.

Lunch Rooms. Each high school has lunch room service, conducted in a most admirable manner. The food served is of excellent quality, the prices are reasonable, and the service prompt and courteous. There is nothing in the order or administration of this modern phase of high school organization that could be criticised. The health and best interests of the children are the sole consideration. The lunch rooms are not run to make money, but are run to be self-supporting. They come under the direct supervision of the supply commissioner of the Board of Education, with each lunch room in charge of a professionally trained and experienced woman director. Evidence of the care taken to secure the best dairy products obtainable is seen in the fact that a contract exists with a dairy for the entire dairy products of a herd which is kept separate from other cows when grazing as well as when in the barns, and the dairy company controlling this herd is required to have two veterinary examinations of each cow made annually in order that the Board may know the cows are in a healthy condition. For the year ending June 30, 1915, the receipts of the school lunches in five high schools were \$68,310.38 with expenditures amounting to \$64,950.21, leaving a balance of \$3,360.17.

The business side of lunch room administration would furnish a real situation worthy of study by the pupils of the classes in advanced bookkeeping and business practice without interference with the actual administration of the lunch rooms. Pupils, through a study of the methods used in ordering sup-

plies, checking up invoices, auditing accounts, etc., etc., would come into some contact with actual business, and this opportunity, although somewhat limited, should be fully utilized in each school. The directors of each lunch room would welcome such co-ordination of theoretical classroom instruction with real business situations as is here recommended.

Further, it is recommended that some sort of correlation be made with the domestic science or cooking classes of each high school, in the preparation on a commercial scale of the lunches for pupils. For example, salads are frequently served in the school lunch, and large quantities are necessarily prepared. There is no good reason why, by previous conference, the cooking class may not be studying salads on the day when they are to be served in the lunch room. While the two problems are somewhat different, still there is enough in common for help to be given to the class in cooking and no interference follow in the lunch room kitchen. Without exception the directors of the lunch rooms expressed a willingness to work out some plan of correlation. Interest in the problem will suggest points of contact.

School life at best is artificial, and teachers frequently attempt to create real situations; why not utilize what the school itself offers of reality and study that?

School Libraries. In each school was a library under the special supervision of a teacher assigned by the principal. The rooms were admirably lighted, conveniently located, and fairly well stocked with books, especially for work in English and History. During the day different teachers are assigned to library duty, so that at least seven teachers a day are administering this important department of a modern high school. It could hardly be expected that each of these persons would be an expert in library administration, and the expense of this arrangement, practically meaning the time of one and two-fifths teachers, at an average salary of \$1500 per teacher, or a total of \$1900 for each school, is an item of considerable magnitude. It might be shown that not more than

one period of the five devoted by a teacher to recitation purposes is given over to special supervision of the library so that the actual cost would not be more than one-fifth of one person's salary, or approximately \$300, while the time of other teachers spent in the library is that which would otherwise be spent in supervision elsewhere. But the important consideration is regarding the educational value which may come from expert library service and the value that would come to pupils in their school work if the regular teachers devoted their time to the supervision of study periods and not in taking charge of the library during a given period. A further question is the money value of a teacher's time in comparison with that of a librarian. Without criticising the efforts now made by the teachers in charge, it is fair to say that library administration has become a highly technical occupation, requiring an extensive and specialized training, and that to put trained librarians in charge of the school libraries would add immensely to the effectiveness of this department. In conjunction with the public library of the city it would seem likely that a plan of co-operation could be worked out.

There was an absence, in most school libraries, of books of reference in the sciences, practical arts, mathematics, and also of departmental and of general magazines. It would appear that the library is considered as an adjunct to the English and history departments and not as having its existence as a general laboratory of research and study and related to all departments of instruction.

Usually the library is closed shortly after the close of school in the afternoon, which means that many pupils are deprived of its advantages. With one person in charge throughout the day such a situation would be obviated.

The administrative offices seemed to be adequate in each school and business with teachers and pupils was transacted promptly and courteously. In all the schools the school records were admirably kept, so that data of all sorts were immediately available and in excellent condition. It would be difficult to

find the administrative machinery of any high school system that would surpass that of St. Louis from the superintendent's office to the classroom teacher.

Supervision of Instruction. The immediate supervision of instruction officially and theoretically devolves upon each high school principal who while the administrative and executive head of the school is also considered as the head of each department of instruction. The principal of a school enrolling over 1200 pupils hardly has time to devote to systematic and continuous supervision in any one field of high school activity. The demands upon his time in legitimate executive work prevent this, in large measure. It would be helpful if a quarterly report were made by each principal showing the number of his visits to the different classes, for the supervision of instruction. Moreover it is no disparagement of the principal to say that the chances are all against his having the scholarship in all departments of high school work which may be the possession of individual teachers, each in his own field. He may reasonably be expected, however, to have a very definite idea why each subject is in the program of studies and to have a definite knowledge of what a given subject is expected to contribute to the personal and social progress of the pupil taking it. He will also be familiar with the principles of general method but not necessarily versed in the special pedagogy of each high school subject. This latter knowledge should be possessed by individual teachers and by the heads of departments, where such are appointed.

The St. Louis schools, however, do not officially recognize departmental heads, although each principal would favor such an organization. In most of the large cities of the country there are in the high schools persons who, under the principal, act as heads of departments, and who are held responsible in a measure for the quality of instruction in any given division of the school program of studies, such as English, Foreign Languages, Mathematics, Science, Practical Arts, etc., etc. These heads of departments, with periods for classroom visi-

tation, assist in the supervision of individual teachers, hold conferences to discuss the problems that arise within their respective fields, study new texts and formulate desirable modifications in subject matter for the various classes pursuing the same subject, in order to better adapt the material and method to the needs of a particular recitation group; *e. g.*, Spanish for commercial use and Spanish for literary and cultural aims—or in Mathematics, Algebra for the shop work in those groups which emphasize the industrial arts, and the Algebra for those pupils who are preparing for the technical schools,—or again, in Science, the Physics of those classes preparing for college, and the qualitative Physics for those pupils who may be seeking a fuller understanding of their material environment.

Just as within a school the work of a school is co-ordinated through the principal, so the work of any given field of instruction would be standardized and unified throughout the city by conferences between principals, department heads, special supervisors and the assistant superintendent, in charge of high schools. Thus there would be realized a substantial unity together with a desirable diversity throughout the entire high school system.

Further vitality and interest in the teaching of various subjects would be helped through voluntary associations of teachers in any given field, as for example, the modern languages, mathematics, English, etc., etc. Questions of method should occupy considerable attention, and the results of experiments and special studies freely discussed. Groups of this sort could well center around similar work done in the extension classes of the Teachers College and of the Sumner High School. Doubtless the organization of such associations is expected and has been advocated by the superintendent and his assistant.

In some measure this end is being realized through the special committees appointed to assist in the general revision of the course of study for the city.

With a group composed of the heads of departments as a cabinet, presided over by the principal, policies may be inaugurated which will reflect more completely the consensus of opinion of the entire teaching body than the mere edict of the principal. With a formal departmental organization an added dignity would be given to the newer subjects of the school program of studies and a strong spirit of co-operation fostered.

Although there is no formal recognition by rule of the Board of Education of departmental heads, still an approach to this type of organization is realized in each school, and this feature has been especially prominent as stated above during the past three years while a revision of the content of each subject of instruction has been in progress.

The principal appoints from time to time a teacher, usually a head assistant, to act as chairman of a group who may be teaching the same subject but such teacher has no responsibility in supervising or initiating classroom activity. The meetings are infrequent and tend rather toward emphasizing uniformity in the results of instruction than in initiating better methods of teaching.

The supervisory phase of high school instruction is too much neglected in most high schools throughout the country on the fallacious theory that if a teacher knows the subject matter he is teaching, his methods will be his own and therefore most effective. One might as truly say this of each surgeon having his own method of surgery, or of each lawyer having his own method of law procedure. There are general methods of law practice as well as general methods of teaching, but in actual practice there must be an application of these methods to concrete situations under competent direction to realize thoroughly efficient results. Such direction may best be had through departmental heads, and it is strongly recommended that this type of organization be adopted.

RELATION OF HIGH SCHOOLS TO CONTRIBUTING ELEMENTARY SCHOOLS

Each term approximately 70 per cent of the pupils completing the elementary schools enter the high schools. As an aid in the closer articulation of these two parts of the school system for some years past the commendable practice has been followed of holding at the respective high schools a conference of parents and prospective pupils. At these conferences the aim of the high school has been presented by the principal and an explanation given of the various courses of study or curricula, and at the same time parents have been invited to inspect the building and meet the different teachers. Again, circular letters from the superintendent's office have been sent to the homes of pupils of the highest elementary grade setting forth the advantages of high school education. There is no doubt but that the letters and the conferences have been of much aid in making the work of the high school better understood, throughout the city.

A still closer relationship would be effected if the principal of each high school were to visit at least twice a year each of the elementary schools in his high school district, and there in conference with the elementary school principal and the teachers of the eighth grade learn first hand concerning the prospective entrants, in order that when they enter the high school they may find themselves more readily in their work.

Through such a conference many pupils, who would otherwise be kept out of high school because usually the elementary school principal is slow to recommend to a high school a pupil who will not, in all probability, reflect upon his elementary school, would have an opportunity to do some work in the high school, in some one of its various forms of activity. He would thus get from the high school more than he could get by repeating a grade. To find places for such pupils, a personal conference and mutual understanding are necessary. For

pupils who are not recommended by the elementary school principal an opportunity is given through special examinations set by the superintendent, to enter the high school. From 20 to 30 pupils take these examinations each year and enter. The danger here is that the results of a mere performance may be taken as the sole measure of a pupil's ability to profit by attendance upon the next year of work in the high school.

There appeared to be no evidence on file, in any of the high schools, of judgments regarding the individual characteristics of pupils coming from the elementary schools. Statements concerning chief school interest, principal outside interest, health, personal qualities, such as promptness, orderliness, neatness, courtesy, subjects in which pupils show special aptitudes, subjects in which they have had especial difficulty and a statement of a pupil's relative position in his class, etc.,—all this information should be at the command of the principal and of the pupil's adviser, in order that the boys' and girls' chances for quick adjustment to the high school may be enhanced, and that a pupil may be checked in making an unwise choice of curriculum. Further discussion of this appears above.

In recent years some significant studies have been made, in at least two large cities, of a pupil's relative position in his highest elementary grade, *i. e.*, whether he ranks in the highest, the middle or the lowest third of his class, and his position in the first high school year, in such subjects as mathematics, English and history. From these studies, the relative efficiency of the instruction in the contributing elementary schools has been at least tentatively determined, and again much light has been thrown upon the problem of individual differences among pupils. This information is of help in placing pupils in proper fields of work.

It is urged that studies such as that referred to be extended in St. Louis. The present practice which looks in the direction of the study suggested above, of sending to the elementary

school regular reports on the first half year's work made by the pupils of the high school, is to be highly recommended. These reports indicate the number of pupils taking the various subjects, the number failing, the average per cent made, and for comparison the entire number taking the various subjects, the number failing and the average per cent made.

B. Classroom Instruction

It was impossible to visit every teacher or to spend much time in any one classroom. Some classes were simply glanced at, although with most of the teachers visited, from 10 to 40 minutes were spent in observation. Many conferences were had at which much was learned of a teacher's aim in teaching his subject and of his opinion concerning the effectiveness of the various curricula. The particular recitations visited were a chance selection although all departments were observed. On some days, owing to various causes, the order of recitations was not as usual, and because of the nearness to the end of the school year many classes were reviewing, and further in some instances the work of the year had been done and books were being collected and accounts settled. Frequently a class would be encountered where only a few who had not been exempt from the final examination would be in attendance. Again several partial holidays interfered with the normal running of the schools. Notwithstanding these conditions enough of the actual work of the school was seen to justify the opinion that the actual teaching throughout the entire city was of a uniform excellent quality. Teachers of academic training and of experience are chosen for all the high schools and the work of the classrooms indicates plainly the wisdom of the particular selections. The great majority of the teachers were anxious to improve their scholarship in the subjects taught and to try out improved methods of instruction. There was a feeling of limitation in the courses now offered, and a desire to have the revision which has been in progress for several

years put into early operation. In the discussion that follows no attempt is made to fully characterize the work seen, but simply to indicate some matters which stood out rather prominently.

ENGLISH

Nearly every class visited was studying literature, and it was apparent, after inquiry, that but little attention was being given to composition, either oral or written. In the interpretation of the literature read, the pupils were active and did most of the work. The comments made by the teachers were illuminating and not too voluminous. In the few composition classes visited, the use of the blackboard is to be highly commended. With eighteen to twenty paragraphs put upon the board for discussion, all pupils get the benefit of the co-operative study of the work of each. In this connection much time would be saved if the projection lantern with reflectoscope attachment, were used to throw compositions upon the screen for the benefit of the criticism of the entire class. Further periods for consultation with individual pupils should be provided. It is recommended that oral composition be given a more definite place in the English unit of instruction. The recitation rooms were well supplied, in most instances, with reference books, charts, maps and pictures.

FOREIGN LANGUAGES

Classes in Latin, Greek, French, Spanish and German were visited. The general quality of work in Latin and Greek was excellent. In the other classes some differences in results were noted in those classes more heterogeneous in their composition; that is, made up of pupils of various school years. In some classes first and third year pupils were combined but in general the work was of excellent grade. In the modern languages a modification of the direct method was characteristic and much oral composition prevailed. The small number of pupils in the upper terms of the language classes was very

noticeable; *e. g.*, at the McKinley school 5 pupils were studying eighth term Virgil, and it happens that no one of them was taking the classical course. One of the eighth term Spanish classes at the Cleveland school had but 7 pupils, while two sections of a first term class enrolled 29 and 30 respectively. At the Yeatman School an eighth term class of 5 pupils began Spanish four years previously with 39 pupils in the division.

In many of the German classrooms there was an excellent array of pictures, charts, maps and of objects all of which tended to make the instruction real and concrete.

It appeared that the Spanish of the Yeatman School was given a special commercial emphasis, as was revealed in a conversation with the instructor and as was evident from an examination paper which was to be given. As an aid in showing the practicability of Latin attention should be called to a Latin exhibit which was hung upon the walls of one of the corridors in the Cleveland School. This served to create interest in this language.

Many of the teachers of foreign language felt that the requirement of two years of a language for all pupils meant a general lowering of the quality of instruction and for many pupils a waste of time. This is undoubtedly true. Moreover many pupils who have been weak in language in the elementary school ought never to be permitted to begin a foreign language, as the chances are all against their success. The following table for the Soldan School from September, 1915, to January, 1916, is significant in this connection:

TABLE SHOWING LANGUAGE FAILURES BY TERMS

Language	Term	Per Cent Failures	Term	Per Cent Failures	Term	Per Cent Failures	Term	Per Cent Failures
Latin	1	23	2	26	7	0	8	0
German ..	1	16	2	14	7	3	8	0
French ...	1	25	2	35	7	0	8	0
Spanish ..	1	19	2	13	7	0	8	0

To show the relation of language failures in the first terms of the Soldan School the following table is of interest:

TABLE SHOWING COMPARATIVE FAILURES

Subject	Term	Per Cent Failures	Term	Per Cent Failures
English	1	15	2	13
Algebra	1	19	2	18
Language	1	20	2	22.5
Science	1	23	2	19

Tables from other schools would undoubtedly show similar results.

MATHEMATICS

The mathematics classes visited were in Commercial Arithmetic, Algebra, Plane and Solid Geometry and Plane Trigonometry. The instruction was generally very good. The topics discussed were those usually found in standard texts and the text book was closely followed. No class showed any tendency toward the newer treatment of mathematics in the first year of the High School course, and the teaching of Geometry showed no marked influence of the recent report of the Committee of Fifteen of the American Mathematical Association, wherein the usual number of propositions is reduced and many real problems suggested. In but few classes did the instructors incline toward making any application of the mathematical truths worked out, to practical problems. There was a feeling among most of the teachers that more recent editions of mathematical texts should be available. The so-called disciplinary values of mathematics were much stressed when questions were asked as to what the instruction was to contribute to the pupils' welfare. Some teachers felt that not all pupils should be required to take both Algebra and

Plane Geometry as a condition of graduation. To this opinion there is coming to be general acceptance, and curricula are being arranged in such a manner that this omission is recognized. The work in Commercial Arithmetic was of the conventional type, and from this new point was well taught. Many teachers of mathematics favor differentiated courses in mathematics with special reference to the curriculum in which the subject appears; *e. g.*, a course in shop mathematics for those pursuing manual training courses, and a course in practical arithmetic, algebra and constructive geometry as a part of a Domestic Arts curriculum.

HISTORY

Two courses in history, ancient medieval and modern history, are offered in all schools in the third and fourth years respectively. Classes in each were visited. In one school the teacher fell into a common error in teaching history, that of talking too much. In another recitation the pupils did the work with only an occasional hint from the teacher. This exercise was a truly social enterprise. The attitude of the class was that of solving a problem and the quality of the work was excellent. All modern history classes were at a disadvantage, however, in having to supplement the texts in use by the dictation of material by the teacher, or the teacher had to prepare mimeographed sheets containing recent historical data. The classrooms were well supplied with maps and charts, and the school library contained much reference material. The history teachers frequently accompany their classes to the library and assist in the finding of material referred to in the classroom. It was found that the projection lantern was frequently used.

The history work of the entire High School system should be reorganized and broadened to include community civics and a study of vocations, United States History and Economics. As is now the case, nearly 60 per cent of those enter-

ing the high school have left before they can get any history in the St. Louis high schools. The point of view of the ancient history and of the later European history should be shifted from the study of the historical facts for their own sake, to a study which shall marshal material so as to bear upon the solution of present day civic and economic problems. In a public school, whose purpose is to assist in the training of young people for effective citizenship, the social studies should have immediate and practical bearing upon the problems of the present, whether these problems be civic, social or economic. The lack of just this emphasis is to be found in the St. Louis high schools.

NATURAL SCIENCES

Classes in Physics, Chemistry, Botany, Physiology and Physical Geography were visited in each of the five white high schools, and the teaching seen was of uniformly high quality. The laboratories were in every instance elaborately equipped, and as has been pointed out, contain a large variety of equipment. Some of the recitations were inductive in character, but in most of the classes reviews were in progress. In the laboratory exercises observed in Physics, pupils in some instances had but slight comprehension of just what they were doing or why. The course in Physics as in Chemistry is based upon a uniform series of experiments supplemented by a study of texts. Both Physics and Chemistry are offered for three terms, two terms of Physics being required of all pupils for graduation. The third term in Physics may be taken instead of Mathematics in certain courses. Some teachers say that many pupils take advanced Physics, not because of any interest in or aptitude for Physics, but to escape more mathematics. In the Soldan school the third term, September, 1915, to January, 1916, showed 22% of failure, as compared with 16% and 17% failure in first and second term physics of the same period.

The content of the Science work of each school is the same for all schools. The physics of the classical course is the same as the physics of the Manual Training course, and the same would be true of each science course. There is no differentiation, and apparently little spirit of curiosity or interest in natural phenomena evident among the pupils, which can be traced to the science instruction. There are excellent note-books, and excellent recitations from the texts, from the viewpoint of formal teaching, but the work lacks a vital touch with real problems which are worth solving. This is not because the teachers are individually lacking, but because of a feeling that they must conform to uniform treatment. In botany and physiology, much emphasis is placed upon structure, in physics and chemistry it is largely upon laboratory manipulation and the note-book records. The physical geography of the last year is taught from a book generally used in the first high school year, and the work seemed easy, and not of fourth year high school quality. All the physics and chemistry that is needed for entrance to higher institutions can be taught in one school year with two double laboratory periods and three recitation periods a week. Such physics as is taught should not be required of all pupils, much less of pupils in the second school year. Physics courses in high schools as large as those of St. Louis should be differentiated in accordance with the different types of curricula and the majority of such courses should be less mathematical in nature. Chemistry courses should also be differentiated at least in the kind of experiments performed. The chemistry of the Domestic Art and Science course should stress those principles which have direct application to the problems of the home. The physiology content should emphasize problems of personal and community hygiene. A recommended sequence of science work is as follows:

First year.—General or Elementary Science, in which the aim is to interpret the physical environment of the pupil and

furnish a purview of the fields, to be subsequently studied as specialized science. Such a course will involve but little laboratory work by the pupil, but much observation and inquiry.

Second year.—The general principles of biology with applications to plant life or botany, animal life or Zoölogy and to human life as physiology. At least one double laboratory period a week should be provided for this subject.

Third year.—Physics in differentiated courses to apply to College preparatory, technical school, manual training and household art courses. This differentiation should be rather from the viewpoint of those who are going on to higher institutions, while the most practical and general type of physics should be for those whose academic training ends with the high school.

Fourth year.—Chemistry with modifications of a basal practical course for those who go on to College or technical schools.

Physical geography could be given in the first year as an alternative with general or elementary science in some curricula. Elementary geology and astronomy, which were formerly found in high schools, are still worthy of a place in the program of studies of the cosmopolitan high school, preferably in the fourth year.

BUSINESS OR COMMERCIAL SUBJECTS

The teaching of the business subjects was of a uniformly high quality. No especially weak spots stand out, although it was evident from conversations with many of the teachers that a larger degree of specialization, whereby each teacher does what he is best prepared to do, would add to the effectiveness of the teaching. The teachers in each school follow very detailed outlines of work in bookkeeping, stenography and typewriting. The classes in many cases contain pupils who are taking the two-year courses, and in a very few cases the one-year courses, as well as those pursuing a four-year course. The result in classes like stenography and bookkeep-

ing is that the quality of work is uneven. It should be said, however, that in program making every effort is made to keep pupils of the various degrees of advancement together.

The pupils taking the two-year course on a nine-period day have too much to do, and only the strongest can stand the strain of 35 periods of work weekly.

The commercial departments in all schools lacked many of the office devices, such as adding machines, addressographs, varieties of filing devices, mimeographs, bookkeeping typewriting machines, etc., such as they are likely to meet with after graduation.

The commercial department is the most distinctly vocational work of the St. Louis High Schools, and should be on a vocational basis at least as far as the commercial arts of typing, stenography and bookkeeping are concerned. The more real problems the pupils taking business subjects can undertake, the better their training for after-school life. The school in its life furnishes many such problems. The lunch room administration could be utilized, and in some way correlated with the advanced classes in bookkeeping. The bookkeeping class could undertake with supervision the administration of the school supplies. The question of the standardization of supplies, the normal amount that should be used, the per capita cost, the organization and handling of a model stockroom with its stock records, etc., all these should be utilized in making practical the text-book instruction, and in teaching pupils economy, and how to take advantage of the real business and life situations that the school itself affords. In some of the St. Louis schools the admirable practice of having advanced pupils in stenography take dictation in the principal's office is followed and with excellent results. Much of the time of teachers in other departments would be saved and pupils of typewriting greatly helped if notes, outlines, and abstracts that have to be prepared for other classes, could be done by the Commercial Department. In order to utilize these opportunities, of course freedom in instruction, and

departure from the daily and weekly prescribed outlines, must be permitted and encouraged.

At the Central School especially there has been worked out an excellent "follow up" or placement bureau, by which the school authorities, including the superintendent's office, assist pupils in securing positions. Detailed studies have been kept covering a number of years, of the beginning salaries of pupils who have gone out from the two-year and four-year courses, showing the distinct superiority of the longer training. Similar records should be kept for all schools. If this record could be supplemented by data regarding increases in salary and changes in positions held, one measure of the effectiveness of the business department would be had. Admirable reports of the work in this department have been made at the close of each term to the superintendent's office.

The plan for the placement of pupils graduating, or completing the different commercial courses, as well as other courses should be broadened and assigned to one person for the entire city. Such a person would become the Vocational Councilor for a large number of pupils. He should be attached to the superintendent's office. Some work of this character is now done.

The penmanship of the entire high school enrollment was unusually good. This was not only true in the commercial classes but throughout all classes.

Very few pupils were following the one-year business course and the opinion of all teachers was that it should be discontinued.

Music

Music classes were visited in two schools, the McKinley and the Cleveland. The work observed was in chorus singing and on the days visited the exercise was one in preparation for a Sunday afternoon concert at Forest Park. The work began with but little interest in one of the classes, and it was found that many pupils were excused from music instruc-

tion. No credit toward graduation is given. This is a mistake. If the subject is worth taking the time of pupils, it is worth being done in such a way as to be worthy of credit. In other classes excellent lessons in musical appreciation and in the interpretation of standard operas were in progress, and pupils were attentive, and upon inquiry several expressed genuine pleasure in the work.

It is recommended that in addition to the occasional practice of the school for the music of the auditorium exercises, that definite units of work, sequential in character, be offered in music and that full credit be given to those successfully completing the work. Music plays take too prominent a part in the social life of the American people to be omitted from the program of studies in their public high schools.

PRACTICAL ARTS

Manual Training, Domestic Art and Science, Drawing, freehand and mechanical. The various shops and rooms for the different courses in practical arts could hardly be surpassed. They should be in constant use both for day and evening classes that the full value of the investment may be realized. It happened that the only shops seen in actual operation were the joinery room and the forge room. The work done was of excellent quality. Upon inquiry it was learned that the viewpoint of this work was that it formed a part of a pupil's general training, and that it is not primarily vocational. Pupils are being acquainted with the fundamental processes which underlie various mechanical, industrial and home-making occupations. As far as possible in the manual training rooms, real shop conditions and standards are maintained, but pupils are trained with a view to understanding the processes rather than centering all attention upon the finished product. The processes of reflection required are what furnish educational worth to practical arts instruction. They also have vocational significance.

Practically only those pupils taking the manual training course get access to the school shops, whereas work of this character is so fundamental that some phases of it ought to be accessible to all pupils in the High School.

It appears that wood turning is receiving too much emphasis in proportion to its true value. It would be better if the fifteen weeks given to this phase of manual training were given to pattern making rather than the reverse, which is now the practice.

The mechanical drawing is only incidentally related to the work of the shops, but the courses are being very well taught. A few classes in sewing and in cooking were visited. Pupils were busy and the products which were displayed showed the excellent quality of the teaching. It seems that too little emphasis was placed in sewing upon the use of the commercial patterns, in fact, in some schools they were not used at all. The principles of dress drafting could be a part of the course of instruction but pupils should be early taught how to use commercial patterns, since the great majority of women will in actual life situations use such patterns.

It would be better for the great majority of pupils if the courses in sewing and cooking could be given in alternate years or the same year, rather than as at present, the first two years given to sewing and the last two to cooking. Again, pupils other than those taking the Domestic Art and Science course should have opportunity and encouragement to take up sewing or cooking in addition to their academic studies, all work being an integral part of the curriculum pursued.

While it is true that for some years pupils of all courses were given an opportunity to take work in manual training, domestic art and science and commercial branches, they took it in extra session hours at an extra expense to the city. By this plan it was evidently assumed that the only academic or book subjects and laboratory work in science meant education, and that by doing extra and outside work a pupil might have an opportunity to learn something immediately useful.

This made practical arts secondary and incidental, rather than co-ordinate with other subjects in a well ordered plan of training.

In the few classes in Art that were visited the theory seemed to be "Art for Art's sake," and that real life problems and situations had only a minor interest. The technique was excellent, but from conversations with teachers the viewpoint of the instructors was not eminently practical in the sense of bearing upon use and utility. Applied design appeared to have little attention. The course for the city allows about five weeks for individual problems, according to the ideas of the different teachers, otherwise all classes were following a uniform course. The work of the city in all practical arts subjects is unified through an efficient supervisor.

The pupils of all courses should have an opportunity to take at least two years of drawing.

THE PRESENT COURSES OF STUDY OR CURRICULA

Each school offers seven uniform four-year courses of study, the courses and the distribution by enrollment being as follows:

JANUARY, 1916—JUNE, 1916

Courses	Central	Cleveland	McKinley	Soldan	Yeatman	Sumner	Total	% of Total Enrollment
Art	60	42	55	84	40	8	289	3.2
Classical	23	19	12	26	7	0	87	1.02
Commercial	308	254	216	226	250	62	1316	15.4
Domestic Science	148	200	236	293	188	245	1310	15.3
General	382	190	342	813	396	241	2364	27.8
Man. Training	169	211	276	267	197	185	1305	15.3
Scientific	219	94	116	242	60	0	731	8.5
	1585	1217	1452	2089	1381	796	8520	86.5

86.5% of the total high school enrollment is found in the four-year courses, leaving 13.5% in the two-year and one-year vocational courses. It will be noted that the percentage in three courses, the Commercial, the Domestic Science and the Manual Training, is practically the same, while the Scientific is about one-half the three named and the general course has almost twice the enrollment of the majority of courses.

GRADUATES, JUNE, 1916

Courses	Central	Cleveland	McKinley	Soldan	Yeatman	Sumner	Total	% of Total Graduates
Art	11	8	3	7	3	0	32	6.5
Classical	2	2	0	1	0	0	5	1.01
Commercial	19	4	7	12	14	2	58	11.7
Domestic Science ..	7	4	13	19	6	4	53	10.7
General	33	7	14	66	13	16	149	30.2
Man. Training	8	4	15	14	8	5	54	10.7
Scientific	10	5	4	7	1	0	27	5.4
							378	76.2

76.2% of the graduates in June, 1916, were from four-year courses, while 13.8% were in the shorter courses. The significant fact appearing from a comparison of these two tables is that the distribution at graduation is not widely different from what a cross section of the school by enrollment showed. Once started on a course relatively few who stay four years change. Many drop four-year courses to the shorter courses as shown by the ratio of enrollment and the ratio of the graduates in the long and short courses respectively.

For the classes graduated in June, 1916, the following table, which is a summary of all schools, will indicate the length of time taken to complete each course:

GRADUATES, JUNE, 1916

Courses	Time in Years							Total
	3	3½	4	4½	5	5½	6	
Art . . . . .	..	..	22	7	3	..	2	34
Classical . . . . .	..	2	3	..	..	..	..	5
Commercial . . . . .	..	..	40	11	4	..	2	57
Dom. Sci. . . . .	..	..	42	8	5	..	..	55
General . . . . .	..	13	110	19	8	1	..	151
Man. Trg.	1	3	38	7	4	..	1	54
Scientific	1	3	24	1	..	..	..	29
Total	2	21	279	53	21	1	5	385

Per cent under 4 years 5.97

Per cent over 4 years 20.87

On time 74.3

A similar table for the January, 1916, graduates is given for comparison:

GRADUATES, JANUARY, 1916

Time taken to complete the course.

Courses	Time in Years								Total
	3	3½	4	4½	5	5½	6	6½	
Art . . . . .	..	..	31	6	4	1	2	1	45
Classical . . . . .	..	1	2	..	1	..	..	..	4
Commercial . . . . .	..	2	30	3	..	..	..	..	35
Dom. Sci. . . . .	..	1	23	3	2	..	..	..	29
General . . . . .	..	10	69	16	4	..	..	..	99
Man. Trg. . . . .	..	..	22	10	5	..	..	..	37
Scientific	1	2	17	1	..	..	..	..	21
Total for All Schools	1	16	194	29	16	1	2	1	270

Per cent under 4 years 6.29

Per cent over 4 years 18.14

Per cent on time 75.57

From the above tabulation, it appears that but 74.3% of the graduates in June, and 75.6% in January, were on time, *i. e.*, completed the four years of work in four years of time. No data are available to show what proportion of these pupils removed conditions at a summer session. It is also evident that 20.8% in one class, and 18.14% in another class, took longer than four years to complete a four-year course. Every day longer that pupils stay means more expense to the city, both by the direct cost of instruction and expense because their room would be taken by other pupils for whom additional teachers must now be provided. The repeater always adds to the expense of a school and to the difficulty of program making.

A statistical study of failures would be illuminating here. Approximately 6% gained time, a half a year in most cases.

Defining a unit as a subject occurring daily throughout a school year, the courses represent the following units of work:

Courses	Years				Total
	I	II	III	IV	
General	4	4	5	5	18
Scientific	4	4	5	6	19
Classical	4	5	5	5	19
Art	4	4	5	5	18
Manual Training	5	5	6	6	22
Domestic Art and Science	5	5	6	6	22
Commercial	5	6	6	6	23

In addition to the above the pupils are required to take music and physical training, which adds four periods a week, or the equivalent of 2 units of work. For this no credit is given toward graduation.

With the normal high school course one of 16 units with diplomas granted on 15 units in some parts of the country, it is evident that too much is required of the St. Louis high

school pupils. A pupil can do only so much during a four-year course, and it is better that what is done be well done than that pupil should undertake too much and fail in part of it. The unusual amount of work accounts for a large number of failures, with consequent lengthening of the school life for some, but the elimination from school of others. Moreover an additional expense is represented in the summer session in which the great majority of pupils are making up failures rather than gaining time.

The following table for the first half of the year 1915-1916 for the Soldan School indicates a degree of failure, data from other schools not being immediately available:

Subject	Grade	No.	E%	G%	M%	P%	Failure
English	1-8	1763	8½	42	25	11½	13
History	1-4	529	15	50	20	8	7
Mathematics	1-8	1477	13	37	21	11	18
Languages	1-8	1535	13	30	24	17	16
Science	1-8	1449	8	40	23	10	19
Average	1-8	6753	11	39	23	12	15

From a study of the courses offered and the rules governing their operation, and in the light of successful practices in various parts of the country, and from the testimony of many teachers, it is true to say,

1. That the courses are each too heavy,
2. That the courses lack flexibility in their adaptation to the needs of individual pupils, for pupils have to be fitted to courses rather than have curricula courses arranged to meet their needs,
3. That it is a mistake to teach physics in the second school year and to require it of all pupils,
4. That not every course should require a foreign language,

5. That for the different courses there should be a differentiation in units of work in the same subject, so that each course or curriculum may be a unity instead of a summation of units of work. This means differentiated units in Science, Mathematics, and in language,
6. That the courses are decidedly lacking in social science studies.

Attention should again be called to the fact that for several years past numerous committees have been at work under the guidance of a general committee, making a thorough revision of the entire Course of Study for all grades in the city. General principles have been formulated and discussed, and in the light of these principles, various subcommittees dealing with particular subjects have been preparing the content of the different units of work. These have been discussed by the central committee and many reports have been agreed upon. Some of these revisions have been examined and many of the recommendations previously made in this report are in agreement with what has already been worked out. Various courses have been suggested for the high schools, but nothing has yet been presented to the Board of Education for formal adoption. This revision has done much to foster a spirit of growth among the teachers and principals and the consequent study has tended to develop a unity of endeavor and a professional consciousness among the entire teaching and supervisory body. The time has now come for some of the suggestions to be tried out in different classrooms of the city, that the results of experimentation may be had before formal acceptance. A course of study cannot be a fixed thing for any community however well it may seem to be adapted at the time of its adoption, and to wait too long before being put into operation, will necessitate another revision in a relatively short time.

C. Equipment

It would be difficult, if not impossible, to find a city in which the high school buildings are better constructed, appointed and cared for than those of St. Louis. Apparently whatever has been found desirable in arrangement or equipment in the newer buildings has been provided, when possible, in the older schools. The result is that throughout the city the high school buildings are admirably, if not in some details, lavishly, equipped.

One cannot but ask the question, however, why it is that with the expensive high school buildings but few rooms except the gymnasiums, auditoriums and some demonstration rooms, are made to accommodate more than 30 pupils each, while the unit classroom of the elementary schools provides for 54 pupils each? As has already been pointed out, some high school classes in subjects in which the recitations are more individualistic than social in their nature, as for example, penmanship, typewriting and bookkeeping, as contrasted with history, foreign language and science, could well be and in some cases are conducted in units of more than 30 pupils each with a less cost and with no decrease in efficiency.

Several instances were observed wherein it appeared that closer co-ordination could have been effected between those who were to use certain classrooms and those who were responsible for their arrangement and equipment.

At the Cleveland High School, opened in 1915, the art room on the top floor of the building has a side and overhead light, and with the difficulty in attaching shades, the use of the projection lantern is made nearly impossible. Again, the narrowness of the room and the arrangement of light makes it difficult to get the light and shade effect so necessary for some phases of work in drawing. Another effect of the overhead lighting as arranged in this building is the excessive heat.

This could, however, be remedied by an arrangement of shades. The cabinets in the art room are well suited to their use.

The arts and crafts room, near the drawing room, has closets which are excellent as pieces of cabinet making but with too many compartments, and most of them too small for the kind of use to which they should be put. The room is equipped with 9 flat top tables for metal work, which is not now carried on, and which it is understood is to be dropped from the program of studies. These tables would be far more serviceable in the physics laboratory than the elaborate tables now found there. The shelves in the stock room are too narrow to take the size of the paper used, and the cabinets are not adapted to the keeping of the special materials used in this department.

In the equipment of the physics laboratories at the Cleveland School the opposite was true. Both laboratories were furnished with elaborate desks and with a large assortment of apparatus when the school opened. For instance, the physics tables, 14 in each of two laboratories, are of maple and stand upon metal supports. Each table is equipped with a gas outlet on the top, with two ink wells and with nickel plated uprights, which screw into a metallic plate, these uprights supporting a nickel plated transverse rod for use in experiments requiring the suspension of balances, pendulums, etc. In addition there is a compressed air outlet, with air at a constant pressure of 60 lbs. at each table and also an electric outlet. Under each table is a small narrow compartment with a falling door. This horizontal closet is practically useless as materials roll out. The distance from the brace near the floor and the underside of the table is adapted to but the smallest pupils. In theory it would seem that this type of table would answer every purpose, but the fact is that a very simple table 4' x 6' with two drawers on each side, with wooden uprights and a wooden crosspiece would answer any purpose for which a high school pupil in physics would need to put it. The cost would be very much less and undoubtedly many

physics teachers would prefer it. The demonstration table of the teacher might be more completely equipped and such occasional experiments as required compressed air, or electricity from the commercial supply could be performed there. The type of physics tables found in the newer laboratory of the McKinley School is admirably adapted to high school physics instruction.

In the Cleveland School, as well as in the other high schools, there was a most complete supply of apparatus, both for class demonstration and for individual experimentation. In fact there is a far greater supply and variety of apparatus than is likely to be used for some time. The ordering of material has been evidently based upon the practice of having the entire class in physics at work at the same time upon a particular experiment, and this would be naturally so where the physics instruction of all high schools is built up around a common set of experiments, such as were copyrighted in 1909 by the Board of Education. This would mean that each pupil would have the same material, and there would be much unnecessary duplication.

There seems to be no need of so large a supply of each of the following piece of apparatus at the Cleveland School, or at any of the other schools: galvanometers, telegraph instruments, relays, platform balances, ammeters, inclined planes, glass demonstration pumps, to mention but a few items. One-third of that particular equipment for each school would be an ample supply. There were provided also several varieties of pliers for each pupil. The Cleveland School laboratories had 14 tables and 18 sets of apparatus, the 4 extra sets evidently to provide for breakages and replacements. In each of the older schools large amounts of unnecessary pieces were found encumbering the closets and desks, and in one instance some pieces were in their original packages in a laboratory table, evidently never having been taken out.

It should be said that an accurate stock record is kept of the entire laboratory equipment, both at the school and at

the office of the supply commissioner and that the general condition of the apparatus and of the laboratories was excellent. When the time comes to equip another physics laboratory it is likely that the surplus of usable apparatus in the present high schools would be of very material help.

The question of laboratory equipment is bound up very closely with the method of science instruction, and within the past ten or fifteen years there has been a noticeable transfer of emphasis from laboratory manipulation with its elaborate equipment to a more descriptive study of some of the larger problems of nature, and with more qualitative experimentation than quantitative work. This will mean simpler high school laboratories for physics. With the present uniform physics course for the entire city, and with the point of view that all pupils should be at work on the same experiment at the same time, the present situation regarding apparatus can be explained. Many evidences were apparent that the newer point of view in teaching physics will be given prominence in the revised course of study in this subject.

In chemistry, the arrangement and equipment, except for very minor changes is very complete in all schools. There could, however, have been a decrease in the number of gas hoods at the Soldan School and in the number of platform balance cabinets upon the chemistry tables there, and the side tables would have been better placed if they were on the opposite side of the room. In the instruction in chemistry, as in physics, the policy of the city is to have all pupils follow the same experiments and practically at the same time. Inasmuch as the equipment for chemistry is not so expensive as that for physics the duplications of apparatus are not so marked.

The rooms for physical geography in all schools are well supplied with charts, maps, demonstration apparatus, and with conveniences for laboratory work. The Cleveland School demonstration table is particularly elaborate, but apparently little used. In fact, it is hardly as necessary with fourth

year pupils as it would be if physical geography were taught in the earlier years of the high school course.

For the first year classes in botany and physiology each school had a similar equipment of tables with a tile square set in the top, and supplied with ink, gas and electric light outlets. The cabinets were supplied with magnifying glasses, individual dissecting sets, compound microscopes and with slides for the projection apparatus with which each room was supplied. Adjoining the laboratories at the Cleveland and McKinley schools and accessible at the other schools were greenhouses which were used in connection with the instruction in botany. In all the schools each table was supplied with a gooseneck electric light which seemed to be an unnecessary expense, as the occasions for its use are very infrequent. A possible explanation may be found in the fact that with some of the instruction by means of the projectoscope, with microscopic attachment, pupils would have an opportunity, by means of the shaded lights, to make copies in their note books of what appeared upon the screen. Here again, all the pupils in this class would be doing the same thing at the same time, and moreover in each high school the same general plan would be followed. The tendency in botany and in physiology is to do less of the microscopic and structural work and to deal in botany with problems of growth and of economic applications to floriculture and horticulture and in physiology with questions of personal and community hygiene. In fact, it was found that the lights were seldom used and in constant danger of being broken by chairs being tipped back. The expense involved is not great but it represents an unnecessary expenditure which would have been avoided if all schools were not supplied with what, at some time, in one school had been an incidental equipment, and of only occasional use.

The commercial rooms in each school are of the same size as the other classrooms, and usually equipped for 30 pupils, although for penmanship, typewriting and bookkeeping, larger

classes could be effectively taught. Each bookkeeping room has a portion set off with glass partitions, to imitate the arrangements found in banks and in some private business schools. These compartments are unnecessary and are not generally used, and their installation represents a useless expenditure. Removing these compartments would permit larger classes in the subjects suggested above.

At the Cleveland and Soldan Schools particularly there were excellent desks designed for use both in bookkeeping and in typewriting, since the typewriters were fastened to a folding top. As furniture, the desks were attractive but they represent an expensive situation, for when the desks are used for bookkeeping they cannot be used for typewriting and hence during the bookkeeping period 30 typewriters, representing at least a value of \$2000, are temporarily out of use. Simpler tables, such as are at the Yeatman School would answer for the typewriting and more of them could be put into a room than can be the case with the combination desks. Furthermore, releasing the typewriters would permit of their wider use. Cheaper flat topped tables would answer for the bookkeeping classes. Whatever could have been saved by a simpler equipment could well go to supply apparatus badly needed in the business department of each school, viz., various types of adding machines, duplicators, additional filing devices, addressograph, bookkeeping, typewriting machines, parcel post scales, etc., all of which pupils are likely to meet with when they go out into business.

The practical arts department, including the various shops used for the different phases of manual training and mechanical drawing and for domestic art and science, are most completely equipped. Each new school shows an improvement over the earlier schools, but all are excellent. In the equipping of these rooms there seems to have been complete cooperation between the teachers of shop work and those responsible for planning the school. In two instances at least commendable economy has been effected.

In the joinery shop, instead of each of 30 benches being equipped with six complete sets of tools, since each bench has six drawers for as many different boys, there is, for example, but one plane frame to a bench and a cutter for each pupil instead of six complete planes. The net saving in equipment for each bench is at least \$30 or \$900 for the entire shop in this one item alone. Other economies are effected with the more unusual tools.

In the joinery shops a very careful record of all stock and equipment is kept, and in general the standards of a well administered commercial enterprise are observed.

The mechanical drawing tables in the Cleveland School are excellent pieces of workmanship. Besides the tilting top each desk has in the rear three cupboards with brass hinges and brass catches. Each desk also has six drawers, one for each pupil who may use the table during the day. The rear closets were designed to hold the T squares, but the T squares in use in the schools were larger than the desk could hold so that the cupboards are useless. Moreover, but one T square is used to a desk and is by preference kept under the drawing board. The desks, therefore, are unnecessarily expensive. It should be said that in this school as in some of the others a saving has been effected by making one set of drawing instruments serve for each desk, instead of supplying each pupil with a complete set. Blue print machines are provided for each school.

In the domestic art or sewing room at the Cleveland School there are quartered oak cabinets which are arranged with compartments instead of with shelves which would better serve the purpose intended.

Adjoining the domestic art rooms are those for cooking and for the laundry. Both rooms are superlatively well equipped and suggest standards for the kitchens of the future home makers.

The gymnasium in the Cleveland School is all that could be desired and in the other high schools, while not compar-

able with the Cleveland School, the gymnasiums with their equipment give evidence that physical training is an important phase of secondary education.

The general impression of the construction, the equipment and of the appointments of the St. Louis high schools is most pleasing. Each new building shows an advance over preceding structures. Such buildings add to the material and architectural assets of a city. Primarily they are for the use of the young people of the city and the youth of St. Louis are exceedingly fortunate in their opportunities for a broad and liberal education in such splendid school buildings.

D. Summary

A summary of recommendations some of which have already been made in different parts of this report, is as follows:

I. Administration.

1. That the assistant superintendent in charge of high schools should have time to devote his entire attention to Secondary education.

2. That a system of departments with departmental heads be organized within each school. This may involve a modification in the salary schedule and of the present system of ranking teachers.

3. That in the equipment of laboratories and buildings a closer correlation be effected between the teachers who are to use the apparatus and equipment and those responsible for furnishing the same. This would apply particularly to new buildings.

4. That a system of Intermediate or Junior High Schools be established in the city. Such schools would enroll pupils of grades 7 to 9 inclusive. The adoption of this might mean the use of the present high schools as Junior Schools with a Central High School as a Senior High School, or this

policy might lead to the erection of some Junior High Schools in strategic parts of the city with the Senior High School in the same building; or a Senior High School together with two years of College work.

5. Related to the idea of the Senior High School is the Junior College or a two years course in advance of the Senior High School, making the public school course one of fourteen years, or practically through the period of adolescence. Many larger cities have already established Junior Colleges and thus opened up to greater numbers of young people collegiate training from which they may go directly to the professional schools.

6. That a high school of observation and practice be established in connection with the Harris Teachers College. This school could well be the beginnings of the Junior High School plan. Such a school would be a laboratory for experimentation in problems of secondary education, and at the same time provide High School facilities for a part of the city not now easily accommodated.

7. That a city system of certification of teachers be established, whereby High School teachers shall be permitted to teach only those subjects in which they shall be certificated. Such a certificate should require in addition to the academic subjects to be taught some knowledge of psychology with special reference to teaching, the principles of secondary education, the special methods of the subject or subjects to be taught, and a knowledge of the history of secondary education. The professional qualifications could be established either by examination or by the acceptance of credentials from approved colleges or summer schools.

8. That a study be made of the relative standings of pupils in the first High School year in comparison with their standings while in the last year of the Elementary School. Pupils may thus be placed in homogeneous groups in first year classes. Also closer articulation will be effected between Elementary

and high school so that more over age pupils may have the advantage of the high school shops, and laboratories.

9. An earlier assignment of pupil advisors who may assist in guiding pupils' choice of curricula is desirable.

10. That in the making of the daily time schedule at the beginning of each term, pupils of the earlier years be continued under the same teacher for two consecutive terms in any given subject of instruction.

11. That the Saturday Voluntary classes and late afternoon classes be re-established and that pupils may receive additional credit for all advanced work done, and thus shorten the period of school attendance.

12. That the summer school be continued, but with special stress upon the gaining of credit in order to shorten the time of the regular courses. In connection with the making up of work failed in during the year, it is recommended that a careful study be made of the relation between the amount of work carried by pupils and the number of failures. To emphasize the making up of work in which failure has occurred is to attack the symptoms and not the cause.

13. That each school library be placed in charge of a trained librarian, so that the library may have a definite place in the school organization as a department on an equal footing with the other departments but intimately associated with all.

II. Regarding curricula:

1. That the quantitative requirement for graduation be 18 units of which music and physical training shall count 2.—The physical training to be given twice a week in two consecutive periods.

2. That all subjects offered in a given school be classified in a "program of studies", and that from this program curricula or courses be arranged, allowing for much option within each curriculum. The following curricula which have

already had some consideration are suggested, together with a statement in general terms of the units that may be required:

A. *Household Arts*: Required units, 11; Elective, 5.

Required:

English, 3
Art, 2 (4 yrs.)
Science, 2
History, 2
Household Arts (4 yrs.)
Music, 1
Physical Training, 1

Elective:

English, 1
Science, 1 or 2
History, 1 or 2
Mathematics, 1 or 2
Language, 2, 3 or 4
Art Appreciation, 1
Theory of Music, 1
Economics, $\frac{1}{2}$
Commercial Law, $\frac{1}{2}$
Commercial Geog., $\frac{1}{2}$

B. *Manual Training*: Required, 13; Elective, 3.

Required:

English, 3
Science, 2
History, 2
Mathematics, 2
Man. Trg., 2 (4 yrs.)
Mechanical Draw., 2
Music, 1
Physical Trg., 1

Elective:

English, 1
Science, 1 or 2
History, 1 or 2
Mathematics, 1 or 2
Languages, 2, 3 or 4
Economics, $\frac{1}{2}$
Commercial Geog., $\frac{1}{2}$
Commercial Law, $\frac{1}{2}$
Art Appreciation, 1
Theory of Music, 1

C. *Fine Arts*. 1. *Drawing*: Required, 14; Elective, 2.

Required:

English, 4
Science, 1
Art, 3
Foreign Language, 2
History, 3
Art Appreciation, 1
Music, 1
Physical Training, 1

Elective:

Science, 1, 2 or 3
Foreign Language, 1 or 2
History, 1
Mathematics, 1 or 2
Economics, $\frac{1}{2}$
Commercial Law, $\frac{1}{2}$
Commercial Geog., $\frac{1}{2}$
Theory of Music, 1
Cooking, 1
Sewing, 1

D. *Fine Arts.* 2. *Music*: Required, 13; Elective, 3.

Required:

English, 4
 Science, 1
 Musical Theory, 3
 Foreign Language, 2
 History, 3
 Music, 1

Elective:

Science, 1, 2 or 3
 Foreign Language, 1 or 2
 History, 1
 Mathematics, 1
 Art, 1
 Music, 1 or 2
 Economics, $\frac{1}{2}$
 Commercial Law, $\frac{1}{2}$
 Commercial Geog., $\frac{1}{2}$
 Cooking, 1
 Sewing, 1

E. *General*: Required, 10; Elective, 4.

Required:

English, 4
 Science, 2
 History, 3
 Mathematics, 1
 Music, 1
 Physical Training, 1

Elective:

Science, 1 or 2
 History, 1
 Mathematics, 1, 2 or 3
 Foreign Language, 2, 3 or 4
 Cooking, 1 (2 yrs.)
 Sewing, 1 (2 yrs.)
 Manual Training, 1
 Mechanical Drawing, 1
 Art, 2 (Drawing)
 Commercial Geog., $\frac{1}{2}$
 Commercial Law, $\frac{1}{2}$
 Economics, $\frac{1}{2}$
 Art Appreciation, 1
 Manual Theory, 1

F. *Commercial*: 4 year. Required, 8; Elective, 8.

Required:

English, 3
 History, 2
 Arith. and Penmanship, 1
 Bookkeeping, 1
 Commercial Law, $\frac{1}{2}$
 Commercial Geog., $\frac{1}{2}$
 Music, 1
 Physical Training, 1

Elective:

English, 1
 Foreign Language, 2, 3 or 4
 Mathematics, 1 or 2
 History, 1 or 2
 Economics, $\frac{1}{2}$
 Manual Training, 1 or 2
 Commercial Art, 1
 Stenography, 2
 Typewriting, 1
 Bookkeeping, 1
 Principles of Salesmanship, $\frac{1}{2}$
 Principles of Advertsing, $\frac{1}{2}$

G. Two Year Courses:**1. Manual Training. Required, 11 units.**

English, 2
History, 1
Science, 1
Manual Trg., 2 (8 terms)
Mech. Dr., 2 (8 terms)
Mathematics, 2
Music, $\frac{1}{2}$
Phys. Trg., $\frac{1}{2}$

2. Household Art. Required, 11 units.

English, 2
History, 2
Science, 2
Hhd. Art., 2 (8 terms)
Dom. Art, 2 (8 terms)
Music, $\frac{1}{2}$
Physical Training, $\frac{1}{2}$

3. Commercial. Required, 6; Elective, 4**Required:**

English, 2 (special)
History, 1
Arith. and Penmanship, 1
Commercial Law, $\frac{1}{2}$
Commercial Geog., $\frac{1}{2}$
Music, $\frac{1}{2}$
Phys. Trg., $\frac{1}{2}$

Elective:

Bookkeeping, 2
Stenography, 2
Typewriting, 1
Correspondence, etc., 1

4. Printing. Required, 10.

English, 2
Printing, 2 (double term)
Drawing, 2 (double term)
History, 1
Mathematics, 1
(Arith. and Bookkeeping)
Science, 1
Music, $\frac{1}{2}$
Phys. Trg., $\frac{1}{2}$

3. That there be differentiated units in such subjects as Science and Mathematics so as to bear immediately upon the special aim suggested by a given curriculum.

4. That special curricula be arranged for pupils who are over age and who may be admitted to the High School without having fully met all conditions for graduation from the elementary grades.

In this connection it is recommended that the teachers in the Manual Training or Practical Arts department be asked in conjunction with the Asst. Supt. in charge of Secondary Education, to visit the teachers of the Manual Training centers for the Elementary Schools and learn what pupils of the sixth seventh or eighth grades may be retarded, discouraged or disinterested in school, and to offer such pupils an opportunity in the high school shops to take up such work as it shall appear is best suited to them.

5. That the amount of foreign language in each school be decreased, viz., Spanish and French to 2 years if offered in third and fourth year only, and that Greek be dropped from all schools, or concentrated in one school only.

6. That the Social Science studies be extended to include such units as Community Civics and a Study of Vocations; Early European History to 1760; Modern European History 1760-1916; U. S. History 1760-1916 and Civic Theory and Practice; Economics, presented as a series of problems; History of Industry.

7. That a course in Elementary or general science be offered in all schools, and Biology, general and applied especially to civic problems be the second year science.

8. That courses in freehand drawing, manual training and household arts together with courses in musical appreciation be available for all pupils as a part of an individual curriculum.

9. That physics and chemistry be taught in two terms only with 7 periods a week including three double laboratory periods; and that these subjects be not taken earlier than the third school year.

10. That much attention be given in English to oral composition and that interscholastic debating be encouraged in all

schools. That there be a systematic and concerted effort on the part of all teachers in each high school in the maintenance of a high quality of English in all recitations.

11. That there be an optional course offered in the 8th term in each high school, to consist of a review of Elementary school subjects, *e. g.*, arithmetic and geography, such a course to count as half a unit.

12. That consideration be given to a proposition to require at least a half year course in Elementary Economics for all pupils.

13. That the admirable follow up system of the commercial department of the Central High School and the less fully developed plans of other high schools, be broadened and its entire administration centered in the Superintendent's office.

14. That an industrial survey be made of the city to ascertain the leading vocations and trades in order to closer relate the work of the school shops to the fundamental industries of the city.

15. That special efforts be made to encourage teachers, particularly during their first two years of service in the city, to take advantage of the opportunities offered in the Harris Teachers College through extension courses for high school teachers.

This report has so far considered the high school system at St. Louis as it appeared from a three weeks study, of the various schools by actual visitation. An attempt has been made to interpret the spirit of the administration and to briefly characterize situations as they have been observed and studied through reports and personal interviews, and observations.

The cosmopolitan high school is the school of democracy, and in St. Louis such schools are admirably organized, and they are being administered in a masterly way from the superintendent's office to each classroom teacher. This administration of the central office is characterized by insight, zeal and

unselfish service. The supervision is sympathetic and helpful. The teachers are all carefully selected people of fine personal qualities to which are added knowledge of the subjects taught, and skill in presentation. The loyalty of all teachers, principals and supervisors to the public school interest and traditions of St. Louis is most marked.

The spirit of co-operation among both pupils, teachers and the administrative officers is to be highly praised.

The extra school activities, social and athletic, while recognized as valuable factors of adolescent training are kept in proper relation to the fundamental purposes of the tax supported high school. The accommodations for high school pupils could not be bettered.

The time has come for a broadening of the opportunities within each school through a more flexible organization of curricula and a broader program of studies. This need has been realized throughout the school system and active steps have been taken to meet the situation. This report but seconds most of what has already been proposed. All these facts should make the general school situation in St. Louis one of great satisfaction to the city and command a continuance of the people's confidence in the present effective administration.

There is probably no large city which has had so consistent a policy regarding secondary education as St. Louis, nor is it likely that any large city has been so generous in providing equipment, or in securing more highly qualified teachers and administrators, or has more admirably worked out its problem as defined.

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